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1922

VOL. XII — NOS. 27 TO 29 INCL.

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STATE OF NEW YORK

FORTY-SECOND ANNUAL REPORT

OF THE

STATE DEPARTMENT OF HEALTH

For the Year Ending December 31, 1921

VOLUME I

ALBANY
. B. LYON COMPANY, PRINTERS
1922

STATE OF NEW YORK,

EXECUTIVE CHAMBER,

ALBANY, *April* 12, 1922.

To the Legislature:

I have the honor to present herewith the forty-second annual report of the State Commissioner of Health for the year 1921.

NATHAN L. MILLER.

NEW YORK STATE DEPARTMENT OF HEALTH

Commissioner, Hermann M. Biggs, M.D., LL.D.
Deputy Commissioner, Matthias Nicoll, Jr., M.D.
Secretary, Curtis E. Lakeman, A.M.
Executive Clerk, Fenimore D. Beagle

Directors of Divisions

Division of Sanitation	Charles A. Holmquist, C.E.
Division of Laboratories and Research	Augustus B. Wadsworth, M.D.
Division of Vital Statistics	Otto R. Eichel, M.D., F.S.S.
Division of Communicable Diseases	Edward S. Godfrey, Jr., M.D.
Division of Child Hygiene	Florence L. McKay, M.D.
Division of Public Health Education	B. R. Rickards, S.B.
Division of Tuberculosis	F. W. McSorley, M.D.
Division of Venereal Diseases	J. S. Lawrence, M.D.
Division of Public Health Nursing	Mathilde S. Kuhlman, R.N.

Public Health Council

Hermann M. Biggs, M.D., LL.D., New York City, *Chairman*

Mrs. Elmer Blair Chairman, Public Health Dept., General Federation of Women's Clubs	Albany
Simon Flexner, M.D., LL.D Director, Laboratories of Rockefeller Institute for Medical Research	New York City
Homer Folks, LL.D Secretary, State Charities Aid Association	Yonkers
Henry N. Ogden, C.E Professor, Sanitary Engineering, Cornell University	Ithaca
T. Mitchell Prudden, M.D., LL.D Vice-President, Board of Scientific Directors, Rockefeller Institute for Medical Research	New York City
Jacob Goldberg, M.D Ophthalmologist, Memorial Hospital	Buffalo

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Consulting Staff

Bacteriologist	William H. Park, M.D. Director, Laboratories, New York City Dept. of Health
Animal Pathology	Theobald Smith, M.D. Director, Division of Animal Pathology, Rockefeller Institute for Medical Research
Communicable Disease	Alvah H. Doty, M.D. Former Health Officer of the Port of New York
Surgeon	George D. Stewart, M.D. Professor, Surgery, New York University and Bellevue Hospital Medical College
Dermatologist	Frederic C. Curtis, M.D. Former Professor, Dermatology, Albany Medical College
Pediatrician	L. Emmett Holt, M.D., LL.D. Professor, Diseases of Children, Columbia University, New York City
Child Hygiene	Henry L. K. Shaw, M.D. Former Director, Division of Child Hygiene, State Department of Health
Statistician	Walter F. Willcox, Ph.D Professor, Political Economy and Statistics, Cornell University
Public Health Education	C.-E. A. Winslow, S.B., Dr. P. H. Professor, Public Health, Yale University
Orthopedic Surgeon	Robert W. Lovett, M.D. Professor, Orthopedic Surgery, Harvard University
Orthopedic Surgeon	Royal Whitman, M.D. Attending Surgeon, Hospital for Ruptured and Crippled, New York City
Syphilographer	John A. Fordyce, M.D. Professor, Dermatology and Syphilis, New York College of Physicians and Surgeons

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PART I

Commissioner's Report; Public Health Council; Public Health Nursing; Public Health Education; Tuberculosis; Venereal Diseases; Communicable Diseases; Laboratories and Research.

FORTY-SECOND ANNUAL REPORT OF THE STATE DEPARTMENT OF HEALTH

REPORT OF THE COMMISSIONER OF HEALTH

Letter of Transmittal

To the Honorable NATHAN L. MILLER, *Governor of the State of New York, Albany, N. Y.:*

SIR.— I have the honor to submit herewith the forty-second annual report of the State Department of Health.

In the reports of the several Divisions of the Department will be found a comprehensive and detailed account of its activities during the year 1921. In commenting on the salient features of the work of the Department as thus presented, I desire further to call attention to some of the existing problems and needs of the health administration of the State.

The Public Health Council

The report of the Public Health Council has already been transmitted to you. As the administrative head of the Department, I should like to direct attention to the unusual character of that report, which has been prepared entirely by my colleagues on the Council, and which takes the form of a review of the public health administration of the State since 1914. On behalf of the executive staff and personnel of the Department, I desire to express sincere appreciation of the terms in which the Council has described the activities and accomplishments of the past 8 years of effort to improve the health of the State.

The Health of the State in 1921 *

The year 1921 was marked by the lowest general death rate and the lowest infant mortality rate in the history of the State. The death rate from all causes for the year for the entire State was 12.3 per 1,000 population, as compared with a rate of 13.8 for the year 1920, and of 15.1 for 1914, the year that the State Department of Health began to function in its present reorganized form. In terms of lives saved, this means that approximately 16,000 more people of the State are now living than would have been the case if the 1920 death rate had not declined in 1921.

It further appears that the death rate for the State exclusive of New York city in 1921 was 13.7 per 1,000 population. The rate in the up-state cities was 12.6, as against 14.0 for the rural districts.

---

* Some of the rates in this section differ slightly from those contained in the original report submitted by the Council as they were provisional only; in this printed report the final figures have been substituted which differ only slightly from the provisional figures.

Although the crude death rate of New York city for the year was below that of the rest of the State, if these rates were corrected by adjusting them to a standard population in order to eliminate the effects of differences in age distribution, the New York city rate would be slightly higher than the up-state rate. In other words if allowance is made for the greater proportion of older people in the up-state population, it will be found that the 1921 rate was really lower up-state than in New York city. These standardized rates cannot be computed for 1921 as all the data required are not available at this time. Rates prepared for 1920 show the relative difference,— in that year the crude rate of New York city was 12.9 and of the rest of the State 14.9, but the standardized rates were 14.0 and 13.0 respectively.

The Reduction of Tuberculosis

The most remarkable feature of the year's health record was the unparalleled fall in the mortality from pulmonary tuberculosis. The 1921 death rate from this disease reached the unprecedently low figure of 89.2 per 100,000 population, as compared with 105.5 for 1920, previous to which year it was even higher. This is equivalent to the saving of 1,719 lives from this one disease alone. While the universal and highly developed campaign waged against tuberculosis for many years by public and private agencies has undoubtedly contributed materially, the drop in the death rate from this disease is so considerable that it is difficult to find a complete explanation for a phenomenon so gratifying.

The usual activities of the Department in this field were carried on during 1921. Following the established policy which has also given excellent results in the aftercare of poliomyelitis and in other child hygiene work, the cooperation of local physicians has been secured in holding 54 tuberculosis consultation clinics in 19 counties, practically all of them in rural districts where tuberculosis dispensaries, the x-ray and other modern aids to diagnosis were not available. Over 1,600 patients were thus examined during the year, and 1387 radiographs taken with a portable x-ray outfit, to be developed later at headquarters, after which the results were reported to the local physicians. This work, besides the inspection of 37 county and city tuberculosis hospitals, and the inspection of sites and plans for new institutions, was carried on by a departmental staff which includes only 2 physicians.

In view of the great interest in child health at the present time it is of interest to note that 42 per cent of the patients examined at clinics held by the Division of Tuberculosis were 15 years of age or under. Besides the heart and lung examinations and x-ray, the eyes, ears, nose, teeth, tonsils and general condition were investigated and treatment suggested.

Other Communicable Diseases

Except for a marked outbreak of poliomyelitis, there were no serious epidemics during the year. More cases of that disease were reported than in any year of record except 1916 and 1912.

The epidemic of 1921 began in July and was centered in the city of Utica and adjoining parts of Oneida county, which reported over 35 per cent of the total of 561 cases occurring during the year outside of New York city. Fortunately the severity of the disease and the percentage of deaths were not as great as in the memorable epidemic of 1916.

The typhoid fever rate, although very low, showed a slight increase over 1920, following a long period of steady decline that has extended over many years. A considerable number of important local outbreaks in 1921 were traced to infected milk, due to typhoid carriers or to active cases of the disease. In none of these instances was the milk pasteurized. The prevalence of typhoid seems to have been occasioned in part by abnormally dry summer weather which in many cases brought about a temporary resort to doubtful private sources of water supply, especially in rural districts, when the normal sources failed.

Smallpox also was more prevalent in 1921 than in 1920. All of the outbreaks occurred in the smaller communities, where vaccination is not usually practiced until a definite outbreak arouses local sentiment. In the 9 largest cities of the State where vaccination is required as a condition of school attendance, no outbreaks of smallpox occurred and the rate for the disease for those cities was only 1-13 of that elsewhere in the State.

Toward the end of the year unmistakable evidence accumulated of the prevalence in several counties of epidemic jaundice, a disease which has rarely been reported in this State. Investigations were at once instituted to ascertain whether this disease is identical with the epidemic jaundice of Japan, the causative organism of which has been found in rats and mice. The first outbreak of the year was reported from Chenango county, where an epidemic of hiccough attracted attention and led to further investigation. The symptoms reported in this outbreak correspond to the description of epidemic jaundice as it has occurred abroad, and occasionally in this country in the past. Investigations by the field and laboratory forces were promptly undertaken in order to establish the identity of the disease and to determine the method for its control. Rats and mice are suspected of having much to do with its spread, which furnishes an additional reason for the ruthless destruction of these pests.

Child Health Consultation Serivce

A " healthmobile " traveling unit, consisting of a physician, a nurse, and an advance agent, has visited 108 small rural communities during the year, and examined 5,126 children in 20 counties, instructing these children and their mothers in measures for the improvement of their health. During the winter months similar consultation clinics were held in places of 2,000 to 5,000 population accessible by railroad, and in fifty such consultations 2,335 additional children were examined, making a total of 7,461. Moreover, as a direct result of these departmental consultations local agencies have been stimulated to organize similar work in 11 counties, whereby 1,862 more children in rural districts have been examined, making a grand total of almost 10,000. No treatment is given at any of these consultations but each child needing medical care is directed to his family physician, to whom the Department sends the record of the examination. It is estimated that at least 50 per cent of the children examined have already had their defects corrected or are under treatment.

Child Hygiene Stations

There are now in existence in the State 134 child hygiene stations in 76 municipalities, which are caring for approximately 20,000 infants, 5,500 preschool children and 1,600 prenatal cases. Sixteen of these child hygiene stations have been established during 1921 as the more or less direct result of the children's health consultations held by the Division of Maternity, Infancy and Child Hygiene.

Aftercare of Infantile Paralysis

Since the 1916 epidemic of poliomyelitis, special appropriations have enabled the Department to carry on a system of consultation clinics for the purpose of giving expert advice to local physicians and nurses in the care of crippled children, and to insure the provision of the necessary orthopedic appliances. The outbreak of this disease in 1921 materially increased the needs and the number of cases of this kind, of which 1,498 were under observation at the end of the year. Sixty-seven clinics were held during the year and 919 patients were examined.

Rural Medical Service

It is in these branches of its work that the Department has occasion to appreciate the pressing need in the rural districts of the State, for better medical service — for more physicians, more hospitals, more laboratories, and more diagnostic clinics to bring the practical benefits of modern science to the children and to the adult population of the sparsely settled portions of our State. Under present conditions the number of physicians in rural districts is rapidly decreasing. This subject, which has had the attention of the Department for some years, is discussed in the report of the Public Health Council. Whatever the remedy finally determined upon, it is a problem which presses for early solution.

Venereal Diseases

In spite of the reduction in available funds, and the consequent reorganization and consolidation of the staff, this division has lost none of its headway, and has made noteworthy progress in its efforts to teach the public that syphilis, gonorrhea and chancroid are dangerous communicable diseases which destroy the health and jeopardize the lives of those infected. Although it has been necessary to discontinue the manufacture and distribution of arsphenamine (salvarsan) by the Division of Laboratories, the emphasis on educational work has made possible the reaching of over 100,000 people by hundreds of lectures in 26 counties, while more than 320,000 educational pamphlets have been mailed and over 1,000 posters distributed. Three years ago there were but 3 venereal disease clinics in the State outside of New York city; now there are public clinics in 36 cities, largely established through the efforts of the Department.

Public Health Nursing

The 28 nurses of the Department, grouped for administrative purposes in the Division of Public Health Nursing are detailed for field duty to the other divisions and have assisted during the past year in the control of communicable diseases, in tuberculosis, child hygiene, and venereal disease clinics, in the supervision of midwives, in the aftercare of infantile paralysis patients, in the prevention of blindness, in securing registration of births, and in many other essential activities of the Department. Institutes for public health nurses were conducted in New York, Syracuse, and Albany, and many lectures were given before various nursing groups.

Public Health Education

In addition to the specific educational work carried on by several of the other divisions, the Division of Public Health Education has continued to publish the three monthly bulletins of the Department, to issue occasional statements to the newspapers, and to edit and distribute special circulars and pamphlets. In 1921 approximately 450,000 pieces of printed matter were sent out, many lectures were arranged and speakers furnished, and the effective field work of the Healthmobile unit continued in rural districts. Eighteen motion picture films were shown 213 times to a total of approximately 144,000 people. A new film showing in detail how the farm house may be equipped with modern plumbing is especially popular. Lantern slide lectures and health films are demonstrably more effective and economical methods of health education than exhibits of panels and models.

Laboratory Service

During the year certain economies and consolidations have been effected in the laboratory work of the Department, but with no loss of efficiency. It may not be generally realized that the development of the central laboratory in Albany and its branch in New York city, in cooperation with over ninety approved local laboratories, has set a standard and provided the citizens of the State with the best equipped and administered public health laboratory service in the world. In 1921 these laboratories performed the enormous total of 1,183,938 examinations of specimens. Nevertheless, there is yet much to be done in the way of new construction to provide adequate space for the present work of the central laboratory in Albany and in the development of local laboratories and supply stations in the rural districts. Cooperation with local health officers especially has made substantial progress during the year. Members of the staff have assisted in 12 courses of instruction in public health. Several notable studies have been published during the year, and various procedures improved as the result of researches.

Sanitation

By legislative enactments which became effective July 1, 1921, the duty of passing on plans for sewerage systems and waste disposal plants was transferred to the office of the State Engineer. As a result, the reorganized Division of Sanitation is carrying on the remaining functions of the Department in the field of sanitary engineering with less than half the former number of employees. Meanwhile the volume of routine work was increased by the dry summer, calling for the safeguarding of many auxiliary sources of water supply. Practically all demands of this character were met, however, and not a single outbreak of typhoid during the year could be attributed to polluted public water supplies.

Vital Statistics

The usual high standards of complete registration of births, marriages, and deaths, were maintained throughout the year,— which was made possible partly through the effective cooperation of the local registrars. The publication of the annual statistical reports for 1918 and 1919 was delayed because of the influenza epidemics and accidents, but these volumes will appear during 1922. The report for 1918 is now being printed and bound and preparation of the subsequent volumes is proceeding according to schedule.

For the first time in the history of the State special tables of marriage statistics have been prepared and are now in press. Also a special compilation of descriptive statistics of the 1918 influenza epidemic was prepared and is also in press. An elaborate tabulation of the infant mortality data of the State was undertaken and is now being printed as a special report. Many of the tables of marriage and infant mortality data will henceforth appear with the standard tables in the annual reports.

The Division cooperated with the New York State College for Teachers by receiving some of its students in mathematics and statistics for practical training by laboratory methods, an arrangement which was of mutual benefit.

During the year many analyses were made for the administrative use of the Department, which were not, however, of sufficient general interest to warrant their publication. This statistical service of the Division has been steadily developed as a feature of its practical work, but its continuance or further extension is, of course, dependent upon the personnel and other resources which may be available.

General Administration

During the year 1921, nineteen new consolidated health districts were set up, making a total of 132 such districts in the State at the end of the year. Including these, there are now 1,466 health districts in the State outside Greater New York, represented by 969 health officers.

A total of 924 municipalities have now adopted the Sanitary Code regulations based on the model code prepared and recommended by the Public Health Council.

The annual conference of the Department with the municipal health officers of the State was held at Ithaca on September 13, 14 and 15, 1921, and was unusually successful, the attendance reaching a total of 928. These conferences have become an established annual institution, and their contribution to the raising of the standards of the public health work of the State is unquestioned.

Courses for health officers have been held during the year at the University of Syracuse, Albany Medical College, University of Buffalo, and New York University. An additional course was held in 1921 in the city of Ithaca, reaching a number of health officers in that vicinity. The total number of health officers who have completed the approved courses since they were introduced by the Public Health Council is 430.

The fifteen Sanitary Supervisors of the Department have continued their effective work in supervising and stimulating public health activities in their several districts. During the year 1921 the Sanitary Supervisors conducted or assisted at 469 clinics, of which 295 were devoted to child welfare and 76 to tuberculosis, the remainder of 98 being of a miscellaneous character.

Legislation

A long step forward in local health administration was made possible by the enactment of chapter 249 of the Laws of 1921, which permits any second or third class city to abolish its board of health and substitute a single, responsible health officer, accountable for his acts directly to the mayor or other supreme appointive authority. This is in accord with accepted modern views of the best principles of municipal administration, as well as in line with the organization plan under which the State Health Department has been able to accomplish so much since 1914. Under this permissive act, the city may fix the term of the health officer at four years, and thereby measurably counteract the possibility of unwholesome political influence. The removal of several excellent health officers after the city elections of 1921, apparently on political grounds, emphasizes the need of establishing municipal health services upon the sole basis of competence and character. The law should be strengthened by making it impossible to remove the health officer except upon charges, sustained after a public hearing, by proof of incompetence or serious misconduct. There is no good reason why a competent health officer should not be permitted to serve his community as long as he is physically and mentally able to do so. Politics should no more enter into the selection and retention of the health officer by a community than it now affects the individual citizen's choice of his private physician.

There is little else in the way of new legislation which the Department has occasion to recommend at the present time. Experience indicates, however, that steps should be taken to expedite the procedure for the prosecution of violations of the public health law and the sanitary code, especially in rural districts. At present it is necessary to hold such violations for action by the grand jury of the County or Supreme Court. Legislation conferring on courts of special sessions or police justices sitting at such courts, jurisdiction in the first instance to hear and determine charges of misdemeanor in violation of the health laws would eliminate delay and effectively promote the adequate enforcement of the law.

Budget Control

I trust it may not be out of place to express the keen satisfaction which the Department derives from its experience with the new state system of budget estimates and appropriations, as administered by the Board of Estimate and Control. The survey of the work of all divisions of the Department of Health made under the competent direction of the Board has resulted not only in findings and detailed recommendations of very definite value in the improvement of the service, but has, in my opinion, had the most salutary general effect of bringing about closer contact and better understanding between the officials of the Department and the Governor and Legislature.

No more progressive step has marked the financial administration of the Department than the plan of grouping personnel appropriations, which was applied by the Legislature to the Division of Laboratories this year. While retaining a full measure of supervisory control in the appropriation bill, the plan still bestows a degree of flexibility in administration that makes possible the meeting of varying conditions in the service and the effecting of concrete economies, while at the same time permitting the more equitable adjustment of compensation within the established limits. This has undoubtedly increased the contentment and efficiency of the personnel, and thereby advanced the quality and quantity of service output. It is earnestly hoped that the plan may be applied to other divisions of the Department in the next annual budget.

I cannot close this report without referring with regret to the very cramped office quarters in which the Department is now compelled to do its work. With the increase of staff already seen to be inevitable in 1922 the solution of this problem will become a matter of the first importance. It is physically impossible to provide for certain foreseen expansions in the present quarters in the Capitol, while the difficulty of securing office space elsewhere in the city is well known.

Respectfully submitted
HERMANN M. BIGGS
March 1, 1922 *Commissioner of Health*

FINANCIAL STATEMENT

Fiscal Year July 1, 1920 to June 30, 1921

	Administration	Child hygiene	Communicable diseases	Vital statistics	Public health nursing	Public health education
Salaries	$64,674 25	$17,935 32	$74,668 13	$34,119 58	$39,721 78	$17,659 08
MAINTENANCE AND OPERATION						
Printing and advertising*	8,416 45	7,385 27	6,577 45	24,065 16	385 75	9,400 49
Traveling expenses	3,642 14	6,078 57	21,299 37	590 49	31,541 17	4,748 54
Equipment and supplies	3,814 78	904 31	1,221 21	4,144 68	714 46	3,116 74
Communication	3,167 55	966 95	1,450 42	1,450 43	966 95	1,046 93
General plant service	504 31	17 59	10 00	1,772 87	43 50	473 38
Care of typhoid carriers			1,000 00			
Rent	3,290 00					540 00
Treatment of venereal diseases						
State aid to tuberculous patients						
Influenza epidemic			19,063 90			
Fuel, light, power and water						
Repairs and alterations						
Maintenance and operation total	$22,835 23	$15,352 69	$50,622 35	$32,023 63	$33,651 83	$19,326 08
Construction and permanent betterments						
Grand total — State fund	$87,509 48	$33,288 01	$125,290 48	$66,143 21	$73,373 61	$36,985 16

* Includes $4,800 cost of Annual Report.

FINANCIAL STATEMENT — *Concluded*

	Tuberculosis	Sanitation	Venereal diseases	Total exclusive of division of laboratories	Laboratories and research	Grand total, whole department
Salaries	$16,620 00	$33,199 31	$17,590 00	$316,187 45	$257,063 22	$573,250 67
MAINTENANCE AND OPERATION						
Printing and advertising*	2,990 32	236 12		59,457 01	6,891 19	66,348 20
Traveling expenses	1,912 57	5,928 26	3,682 75	79,423 86	2,799 71	82,223 57
Equipment and supplies	2,530 95	1,552 67		17,999 80	97,971 33	115,971 13
Communication	998 75	966 95	163 31	11,178 24	7,955 48	19,133 72
General plant service	406 30	127 00		3,354 95	1,888 05	5,243 00
Care of typhoid carriers				1,000 00		1,000 00
Rent				3,830 00	1,600 00	5,430 00
†Treatment of venereal disease			29,070 21	29,070 21		29,070 21
State aid to tuberculous patients	2,878 50			2,878 50		2,878 50
Influenza epidemic				21,063 90		21,063 90
Fuel, light, power and water					13,219 47	13,219 47
Repairs and alterations					3,981 41	3,981 41
Maintenance and operation total	$11,717 39	$8,811 00	$32,916 27	$227,256 47	$136,306 64	$365,563 11
Construction and permanent betterment					19,726 16	19,726 16
Grand total — State fund	$28,337 39	$42,010 31	$50,506 27	$543,443 92	$413,096 02	$958,539 94

* Includes $4,800 cost of Annual Report.

Payments from Interdepartmental Social Hygiene Fund for Division of Venereal Diseases:			
Salaries		$54,889 04	
Traveling expenses		16,067 24	
Printing and advertising		315 90	
Equipment and supplies		1,835 33	
Communication		25 70	
Total		$73,133 21	
Total federal funds			$73,133 21
Total		123,639 48	
Grand total, whole department			$1,031,673 15
Salaries		$10,314 31	
†Maintenance and operation:			
Printing	$8,342 62		
Equipment and supplies	4,390 57		
Traveling expenses	5,421 96		
Communication	618 75	18,755 90	
		$29,070 21	

PUBLIC HEALTH COUNCIL

PUBLIC HEALTH COUNCIL

His Excellency, Nathan L. Miller, *Governor of the State of New York, Albany, New York:*

Sir.— The Public Health Council of the State Department of Health finds it necessary, for the adequate performance of its duties, to keep itself informed about the wide range of practical activities of the Department; since concerning these as well as the outlooks for more effective public service, the members of the Council are in frequent formal and informal conference with the Commissioner and the Deputy Commissioner of Health. The Council's survey of the activities of the Department this year has been more than usually retrospective, and has shown so striking and gratifying a record that, though the Council has been directly concerned with but a few of these great administrative achievements of this last decade, we venture to call the attention of your Excellency to them as a sketch of the background in which the Council as well as the active workers in the Department find inspiration, and the leaders, direction and control for future plans.

A Retrospect

The Public Health Law of the State of New York was revised in 1913 in accordance with the recommendations of a commission which made an extensive study of the existing conditions. The present Commissioner of Health was the chairman of this commission. At that time the State Department of Health had very limited facilities, was, in fact, chiefly a paper organization — excepting the Division of Engineering and the Division of Vital Statistics. In 1914 the reorganization of the Department was effected. Some glimpses of the changes and improvements in the condition of the public health and in public health administration in the State and elsewhere since that time are here brought together in review, marking as they do the results of the activities of the reorganized State Department of Health, cooperating with the local health officers, the State Charities Aid Association, and other official and voluntary agencies.

(1) **Administration.**— 1. Several provisions of the revised public health laws have been so highly regarded by sanitarians and public health officials that they have been incorporated in the public health laws of several other states.

2. The Public Health Council has enacted a Sanitary Code having state-wide effect, which it endeavors to hold abreast of the advances of science and adapted to the changing neds of the community. It has also prepared a model local Sanitary Code which has been adopted by over 800 local municipalities, thus fostering a uniform plan of local health administration throughout the State.

3. The number of local health officers has been reduced through

consolidation of health districts and the efficiency of administration and the compensation of the health officers have thus been correspondingly increased. While originally there were 1466 health districts and health officers in the State outside of New York city, today we have 1329 districts served by 966 health officers.

4. Branch offices have been established in the cities of New York, Buffalo, Syracuse and Hornell; also a branch laboratory has been established in New York city.

5. In 1913 there were less than 100 public health nurses employed in the State outside of New York city. There are now over 1150.

6. Nurses have been supplied to the Indian Reservations and to the child hygiene, tuberculosis, venereal diseases and group-consultation clinics.

7. In 1913, 87,829 pieces of first class mail were received; in 1920, 204,498 were received — an increase of 133 per cent. In 1913 a total of 196,445 pieces of mail were sent out; in 1920, 791,516 pieces of mail were shipped — an increase of 303 per cent. The total number of pieces of supplies and literature sent out during 1920 was 2,290,692.

(2) **Vital Statistics.**— 8. The reorganized Department has perfected the registration of vital statistics so that the registration of births and deaths is now practically complete, and the fullness, scope and value of the reports of communicable disease have been very greatly improved. No more reliable statistical data are now available in the United States than in the State of New York, and none are more instructively presented.

9. The general death rate for the State, exclusive of New York city, has declined from over 15 and a fraction per 1,000 population to less than 14. Each point reduction in the general death rate equals about 5,000 deaths.

10 The general death rate for 1921 — 13.5 per 1,000 of the population — was the lowest in the history of the State.

11. The death rate from pulmonary tuberculosis has been greatly reduced. In 1910 it was 124.1 per 100,000; in 1921 it was 86.2 per 100,000.

12. The infant mortality of 1910 was 135 per 1,000 births; for 1921 the rate was 81.

13. The death rate from typhoid fever in 1910 was 18.7 per 100,000; in 1921 it was 5.3.

(3) **Laboratory Service.**— 14. It has set a new standard to the world in the development of public health laboratory service for a state, and in the organization and standardization of all the county, municipal and private laboratories of the state engaged in public health work; so that they can cooperate with the large and well-equipped central laboratory in Albany as a unit.

15. It performed in its laboratories 201,531 diagnostic examinations last year.

16. It distributed last year 190,965 outfits for specimens for bacteriological diagnosis.

17. It produced and distributed in 1920, 148,217 packages of serum and vaccine for the treatment and prevention of infectious diseases.

18. It produced and distributed over 70,000 doses of arsphenamine for the treatment of syphilis.

19. It has stimulated the establishment of municipal and county public health laboratories and has supervised and standardized their work. There are now over 90 approved local, municipal and county public health laboratories subject to inspection.

20. Nearly 400,000 diagnostic examinations were made in these approved laboratories in 1920.

21. Local municipal laboratories have been established in epidemic emergencies. In several instances these have been subsequently taken over and maintained by the local authorities.

22. In emergencies the work of local laboratories has been supplemented by the mobile laboratory units.

23. It has established throughout the State depots for the distribution of laboratory products — serums and vaccines for the treatment and prevention of disease — where these as well as outfits for the collection of specimens for diagnosis can be readily obtained by practicing physicians.

24. The New York State Association of Public Health Laboratories — an independent organization — has been formed to stimulate and coordinate the work of the local laboratories. There are semi-annual meetings, one of which is held at the State laboratory in Albany.

25. The State laboratory furnishes training for laboratory technicians, bacteriologists, serologists and directors of local laboratories, thus ensuring an available personnel, otherwise unobtainable.

(4) **Education.**— 26. The Public Health Council has established minimum qualifications for health officers, and through the public-spirited cooperation of teachers and colleges, courses of training have been provided in New York, Albany, Syracuse and Buffalo, which more than 600 health officers have either taken or are now taking.

27. Intensive courses of training for nurses have been provided and are now being conducted, at which public health nurses have been given an opportunity to qualify themselves for their work.

28. Annual conferences for health officers and public health nurses (which have been extraordinarily helpful and successful) have been held. The average annual attendance has been from 800 to 900.

29. The Department has held under the direction of its Sanitary Supervisors once or twice annually in each sanitary district a conference for local health officers and public health nurses.

30. It edits and distributes four monthly publications — Health News, Public Health Nurses' Bulletin, Health Officers' Bulletin and Vital Statistics Review.

31. It has prepared and distributed manuals for health officers and public health nurses.

32. It has carried on through the press and in other ways continuously a general educational campaign on public health.

33. It has carried on extensive educational campaigns in many cities of the State on venereal diseases, tuberculosis, child welfare and diseases of adult life.

34. It has for a number of years conducted educational exhibits in public health in connection with the State Fair at Syracuse and with the county fairs throughout the State.

35. It is constantly providing lecturers on various public health topics for organizations of various kinds such as Farm Bureaus, Home Bureaus, Y. M. C. A. and Y. W. C. A. organizations, factory employees, women's clubs, etc.

36. In the past three years more than 1,500 lectures have been given before about 250,000 people.

37. In 1920 more than 100,000 persons were addressed by the lecturers on venereal disease.

38. It is estimated that the Division of Venereal Disease exhibits have been seen by over one million people.

39. Circulars and pamphlets of information regarding venereal disease, numbering about two and a half million, have been distributed.

40. More than 40,000 venereal disease posters have been placed.

41. The Department has kept in circulation 34 moving pictures films; one alone of these during six months was shown to 15,570 people.

42. In cooperation with the Farm Bureaus, it has assisted in organizing and addressing 175 classes in the home care of the sick, which reached 12,865 women.

43. It has brought about the organization of health centers in a number of cities of the State.

(5) **Child Hygiene.**— 44. In 1913, outside of New York city there were 32 child hygiene stations in 12 municipalities of the State; these were increased to 67 in 32 localities in 1914 and further increased to 95 in 52 localities in 1920. The work of these increased from 11,680 infants under care during 1914, to 31,311 children (27,156 infants and 4,055 children of pre-school age) under care during 1920; while in addition there were 1,792 mothers under care during the pre-natal period.

45. During 1920 there were conducted in these child hygiene stations 3,315 clinics; and 79,343 home visits were made to these little patients by the clinic nurses.

46. A Healthmobile, especially designed and equipped for rural medical clinics, was utilized during 1920 for the examination of 2,722 children for remedial physical ailments. At similar consultation clinics held during the present year (1921) 8,244 children were examined; making to date a total of about 11,000. Not included with these are many other similar consultations held under local supervision in cooperation with officers of the State Department. Through the cooperation of local public health nurses and health officers, subsequent oversight has been main-

tained over children found with physical ailments or defects, and an effort is made to secure and foster the treatment of ailments and the correction of defects by the family physician.

47. The Department supervises and inspects the activities of 52 day nurseries.

48. Before 1914 there was little or no supervision of midwives in this State outside of the cities of New York and Buffalo. Today there are 616 midwives licensed by the State Department of Health, and under its constant supervision by its own supervising nurses with local public health nurses working in cooperation with them.

49. The Department has supervised the aftercare of more than 2,500 cases of infantile paralysis scattered throughout the State remaining from the 1916 epidemic, and in addition to these has taken over the supervision of many other cases from previous outbreaks of this disease. This work has been of surpassing value in rescuing these pitiful victims of disease from the miseries and handicaps of incurable cripples.

(6) **Communicable Diseases.**— 50. The Department is constantly aiding local authorities in the suppression of outbreaks of various forms of communicable disease, both by furnishing epidemiologists and nurses, and in laboratory service.

51. It annually receives, tabulates and analyzes over 150,000 reports of cases of communicable disease.

52. It has conducted tuberculosis surveys in connection with the local authorities in many counties of the State.

53. In 1910 there were only 650 beds available for tuberculosis in the State outside of New York city. There are now in 40 counties, having a population of 35,000 or more, 37 county hospitals and 7 semi-charitable institutions for tuberculosis with an available bed capacity of 3,827.

54. It has provided model plans for county tuberculosis hospitals of different capacities and has inspected and passed on the sites and the water supplies and building plans of these institutions, and advised the county authorities in their erection, and in any subsequent additions or extensions.

55. It has brought about the establishment of tuberculosis clinics in 38 cities and 6 of the larger villages in the State.

56. In 1920, 73 tuberculosis clinics were conducted in 32 counties and 2,363 patients were examined. Previous to 1920, 306 clinics had been held in 37 counties, and 6,282 patients examined

57. Modern clinical facilities for diagnosis are provided by the Department for local health officers and physicians. During the present year 2,400 X-ray pictures were made of doubtful cases presented for diagnosis.

58. The activities in the prevention and control of communicable diseases are conducted directly through the activity of Sanitary Supervisors who made over 500 visits during 1920 on account of communicable diseases alone and directed the measures employed in controlling nearly 100 local outbreaks.

59. The Department has brought about the establishment of venereal disease clinics in 36 cities of the State.

60. It has applied the Wassermann test to the inmates of all voluntary and public institutions for children to which admission could be obtained. More than 10,000 examinations have been made.

61. Largely as a result of stimulation by the Venereal Disease Division the Wassermann test has been applied to the inmates of the State prisons and to most of the inmates of the state hospitals.

62. It has conducted in the cities and rural sections of the State a number of general diagnostic clinics where experts in the various departments of medicine have given free consultation to physicians in the diagnosis and treatment of obscure cases of disease.

(7) **Sanitation.**— 63. The Department has conducted, under special orders of the Governor, extensive examinations — such as those regarding oil pollution of the waters of New York harbor and the nuisances arising from the operation of the industrial plants at Edgewater in relation to the Riverside Drive section of New York city.

64. It has inspected 550 watersheds and public water supplies of the State, reported on the conditions found, made recommendations as to improvements which should be made, and kept them under supervision and reinspected many of them.

65. It has supervised the operation of a very large number of sewage disposal plants.

66. It has made extensive surveys of the oyster beds of Long Island and Staten Island with reference to pollution by sewage.

67. It is constantly conferring and advising with the local authorities in all parts of the State on sanitary questions of every variety.

68. During the drought of the summer in 1921 the Division of Sanitation was called upon repeatedly to assist municipalities in installing emergency chlorinating plants for sterilization of auxiliary water supplies to augment the regular supplies which had become inadequate. Its emergency plant was in constant use and in many cases emergency treatment plants were installed.

69. The Department has prepared permits for the discharge of sewage and sewage effluent in the waters of the State.

70. It inspects as to construction and sanitary condition, and supervises the operation of nearly 300 milk pasteurizing plants supplying pasteurized milk to the cities of the State excepting New York city.

71. It has inspected and brought about the abolition of thousands of public nuisances having local or general effect.

72. It has made sanitary inspections and reinspections of all the state institutions.

Such are the activities of this Department of Health, in which the interest of the Council centers, as befits that advisory body, before which are brought for discussion and advice new projects for the improvement of the public health, questions of emergency administration, problems in which the technical knowledge and experience of its members may be helpful, suggestions for making the provisions of the Sanitary Code more effective and less burdensome to the community. And the Council may venture here to express to your Excellency, with less reserve than would be natural to the Commissioner under whose wise guidance these triumphant achievements in welfare have been secured, their pride and satisfaction in the privilege of sharing in so excellent and fruitful a public service.

The Local Health Officer

When the Public Health Council was created, it was specifically charged with the task of advising the Commissioner as to methods by which a higher standard of public health might be maintained throughout the State. The crude death rates of the 24 states included at that time in the United States Registration Reports show New York to be the eighteenth on the list, apparently considered a dishonorable place for the Empire State.

The legislators, or those responsible for the Public Health Law of 1913, evidently acting with prophetic vision of better standards of living, by the very fact of its creation made the Public Health Council its agent for securing both a greater exemption from particular diseases and a larger enjoyment of unalloyed good health.

In studying the problem the Council were soon persuaded that the matter was one in large measure of education, that while in general it was well known, for example, that diphtheria was both preventable and curable, it was evident that in parts of the State medical practice failed to avail itself of the proper preventive and therapeutic agents or that in many sections of the State individuals, if not entire communities, were so isolated as to be entirely dependent on the knowledge and skill of their local medical practitioner, who in many instances had no experience in the use of the new treatment by vaccines and antitoxins. To the self-sacrificing devotion of these men, often advanced in years, who at the call of the sick traveled and still travel over miles of rough mountain road, in all kinds of weather, no tribute of appreciation can be overstated. The physical hardships incident to such devotion to duty has shortened the days of many a country practitioner and many lives have been offered as sacrifices to those they served.

The insistent demands of their practice continually renewed gave little time for reading and study, and in many a doctor's office could and doubtless can yet be found piles of medical journals, crowded with the latest discoveries of medicine and their applications, thrown into a corner unopened because of more pressing calls. Men of such training when appointed health officer were loyal and earnest agents of the Department in so far as they had time, and to the extent of the knowledge given them in the medical schools of the 70's and 80's. But modern medicine may almost be said to date from that time; the advances and changes of the last 30 years are staggering — so violent has been the upheaval of the old theories and methods. As an example, pneumonia, then was an inflammation of the lungs, to be treated in an air-tight, overheated room by external applications to the chest. Now the treatment, among other things, is free exposure to outdoor air and nourishing food.

The problem of giving to such isolated health officers the opportunity of again coming abreast of most recent theories, particularly of communicable diseases, was easily seen to be complicated by the very small financial return attached to the position of health officer. The Council found many cases where the compensation was less than $100 a year, even after the legal payment of 10 cents per capita was observed; a sum obviously too small to justify the recipient in spending any large sum and much time in qualifying preparation. One hundred and ninety-four towns of the State have each a population of less than 1,000 — *i. e.*, the health officers of those towns have salaries almost negligible. Some advantages in administration have accrued by the consolidation of the smaller districts, 1,466 health districts having been reduced to 1,329 districts by this means, and the compensation provided by the larger district thus correspondingly increased. But there are even yet a very large number of towns in which the health officer receives only a nominal salary. No special university training could be expected when the reward was so meagre, and the fact that then, even in cities, there were few full-time health officers and all health officer salaries, part time as well as full time, inadequate, made the problem one difficult of any general solution.

After long consideration, the Council invited the several medical schools of the State to take the problem as outlined above under advisement with a view of furnishing opportunities to those willing to avail themselves, and finally four schools, viz., University of the City of New York, Syracuse University, Albany Medical School and University of Buffalo, arranged courses that were published as open to practicing physicians. These courses were of several kinds, either (1) correspondence courses, in which the work consisted of questions to be answered by reference to the latest books on sanitation and a week's laboratory practice; or (2) by a day and a half lecture and laboratory session on each of six successive weeks; or (3) by actual continuous residence for ten days. It was hoped that the interests of their profession, if not the success of their administration, would induce many physicians to renew their studies and thereby react as physicians on their patients and as health officers on their communities. As a further inducement the Council enacted, in fixing the qualifications for appointment, that every health officer appointed after 1915 must have received a certificate from a medical school to the effect that the appointee had successfully pursued a special course in sanitation and public health, duly approved by the Council.

The Department of Health itself cooperated in every way possible in this campaign, allowing the officers to give lectures, opening the laboratories as needed, giving advice on courses, material and texts, and even acting as registrar, to relieve one of the schools of the extra clerical work. The response of the health officers and the effect on the public health work of the State has been equally gratifying. At the present time more than half of the health officers now in office have temporarily absented themselves from their practice for the sake of the self-improvement made possible by the cooperation of the schools. The practical methods of modern serum therapy have been appreciated and put into practice. Never was the control of communicable disease throughout the State so complete or the promise of further advance more bright.

As a temporary measure, intended only to improve existing conditions, the result has more than justified the expectations of the Council.

It is, however, only a temporary result and with the graduation of younger men and the expansion of courses in sanitation in the medical schools, the value of such correspondence and short-time courses is passing, if indeed it has not already passed, and the Council now faces the problem of proper qualifications of the health officers of the future. The young graduate from the better medical schools today is not lacking in theoretical knowledge of infection and of immunity, natural and acquired, and of the various ways in which the physician may assist the processes of cure.

He may be prepared, so far as the general bacteriological background goes, to superintend the work of preventing an outbreak of communicable disease in a community or of checking it, should any such disease become epidemic. He lacks, however, the practical applications to public health work required of the health officer, and commonly omitted in medical school courses in favor of general therapeutics and diseases of special organs. He has no knowledge of his rights as health officer under the law, nor of his obligations as a state official. He has no experience or training in water supply, in sewage and wastes disposal, in ventilation, in muscle fatigue or in dietetics. He has no experience or training in dealing with the health of a community rather than with the individual, in so ordering conditions that disease is prevented rather than cured, in educating his clientele rather than in treating them.

Such training, involving as it does an altogether different viewpoint, is hardly to be expected in a medical school. It must come from a school whose course is framed distinctly for such a purpose, and the Council looks forward confidently to the time when such schools as now exist at Harvard and at Johns Hopkins, granting the Degree of D. Ph. to graduate physicians after two years' study, will be a prerequisite to appointment as health officer to every city of the State. It was with rare foresight that the framers of the Public Health Law indicated that confidence by establishing that any physician holding a certificate in public health from a school approved by the Regents in a course approved by the Council should without other qualifications be eligible to appointment as health officer.

But there must be created a demand for trained health officers in order to justify a young man in spending the extra year after the long period of study now required for an M. D. Degree. The people of the State must become cognizant of the greater safety of living in the care of a competent health officer. They must give evidence of their belief by allotting a reasonable competence to such an official, and they must realize their own duty to cooperate in matters of public health so that the knowledge and training of the health officer shall not be exercised in vain.

The Council is ready to adopt more rigid requirements and doubtless there will not be lacking young men willing to qualify, so soon as the communities make the demand; meantime each community continues to purchase such a degree of public health as it desires.

The efforts of the Council are now directed toward the improvement of these emergency courses for health officers, the persuasion of prospective and actual health officers to take them, and the enlistment of the public interest for its own sake in the establishment of higher standards, and the provision of adequate compensation.

Routine and Emergency Activities

The Sanitary Code.— In the routine work of the year many suggestions for the amendment of the Sanitary Code have been considered. Several of them came as usual from the Sanitary Supervisors — others were referred to them for advice; and such cooperation marks the high character of their work and their devotion to the interests of the communities which they so ably serve.

One of the changes in the Code made during the year deals with the manufacture and sale of shaving brushes. It has been brought to the attention of the Council that anthrax, a germ disease, a particularly fatal disease to man, was being transmitted through the medium of shaving brushes made from horsehair. Such brushes came into common use during the war when better materials were not to be obtained in sufficient quantities. At that time the Code was amended requiring that the material used in the manufacture of all shaving brushes be sterilized before sale. Subsequently, it became apparent that complete sterilization of such material was not being done, partly because the spores of the anthrax bacillus are so resistant that they withstand the usual process of sterilization. Hence, although the contaminated material is only known to come from certain foreign countries, it was deemed imperative in this new amendment to forbid the manufacture or sale of shaving or lather brushes made from horsehair, and Regulation 6a of Chapter VII of the Code was amended accordingly.

This emergency amendment to the Sanitary Code is noteworthy for two reasons. First, it is contrary to that tendency of modern health administration, followed whenever practicable by the Council, which constantly strives to achieve its aims with the least possible interference with the convenience of citizens or the interest of business. Notable success in this conservative and salutary course is achieved by closely following the growing knowledge of germs and the lessons of modern epidemiology.

In this case, however, the only way in which the State Department of Health could meet this real peril to a considerable number of its citizens, was by stopping this phase of manufacture and trade forthwith and altogether, so far as the Code can do it. Fortunately, in this instance the Council has received assurance of the acquiescence of the manufacturers in the proposed curtailment of their business.

The second point of interest in this action is, that whatever the Department of Health of the State of New York, or any other single state, or any unofficial combination of states, may do to try to ward off the dangers of anthrax importation — and this danger may go far beyond the bailiwick of shaving brushes — should the infection of cattle or the contamination of the soil become widespread in this country — such efforts are temporizing, local, limited in efficiency, and do not hit the sources of danger. The remedy lies in stopping the importation of merchandise contaminated with anthrax, or securing its adequate disinfection — preferably before shipment — or at any rate before it is distributed in the channels of manufacture and commerce.

Another noteworthy addition to the Code was Regulation 41a of Chapter II requiring the health officer to report to the State Department of Health immediately whenever an outbreak of diarrheal disease comes to his attention. This addition was made necessary by the large number of such outbreaks occurring in various parts of the State. Not having been before designated in the Code as reportable, the Division of Communicable Diseases learned of them only casually, and usually after the outbreak had ceased. If such outbreaks are to be studied and prevented, immediate knowledge of their existence is necessary. It is confidently to be hoped that in the future intensive studies may be made of the causation and prevention of these epidemics of mild but, especially in children, very important intestinal disorders.

A third change in the Sanitary Code deserving of special mention requires the health officer to cause the confinement of an animal suspected of having rabies or to cause such animal to be killed and proper laboratory examination to be made so that the diagnosis of the disease in the animal may be confirmed and preventive treatment, if required, promptly initiated.

All of the above and other amendments to the Sanitary Code enacted during the year are given in full as Appendix I which is attached to this report.

The desirability of changing the regulations of the Code regarding the grading of milk and cream was fully discussed at several meetings of the Council, but it was concluded that no changes be made at present.

Other changes in the Code suggested to the Council dealt with the control of communicable diseases. These suggestions would have defined more clearly and limited more closely the duties of the local health officer. After consideration at several meetings of the Council it was decided that discretionary powers should remain with the local health officer, and that better control of the communicable diseases would be secured by leaving a wide field over which the local health officer might exercise his own initiative.

Qualifications of the Sanitary Supervisors.— The Council amended the regulation for qualifications of Sanitary Supervisors previous to the last examination for this position. This regulation is submitted attached hereto as Appendix II.

Health Officer Exemptions.— The applications of 147 health officers for exemption from the educational qualifications for health officers established by the Council were passed upon during the year.

One of the serious difficulties encountered in the effort to safeguard the health interests, especially of small communities, by the establishment of certain required standards of modern knowledge and of experience in the health officers of the State, has been the dearth of physicians in many rural districts. And in too many instances the Council has been forced to sanction the appointment of local health officers, not in its judgment qualified by education or training to afford to their constituents the protection against disease and the help in emergencies which science today freely offers, because they were the only available candidates under the existing law requiring so many small units of health administration, and it was a question of them or nothing.

The situation is due to the following:

1 Inadequate per capita allowance in rural districts.

2 The lack of physicians in rural districts.

3 The advanced age of many physicians in rural districts and the absence of public health instruction at the period in which their medical education and training were received.

4 The present inadequacy of the instruction in public health in medical schools.

Thus there is no pecuniary incentive to a career in public health for physicians or even for them to take the minimum instruction required for their work, and there is neither on the part of physicians nor of the lay public a general appreciation of this situation in which on the one hand the medical profession cannot or does not become trained or qualified; and on the other hand, the citzen has no practical demonstration of the needs or benefits of fully trained and qualified health officers.

In many such cases, even the tender of the short emergency courses of instruction in modern public health, provided at the request of the Council by a few public-spirited colleges and expert teachers, were declined by candidates, ineligible without them, because the utter pittances which many coummunities offer under the designation of "compensation" is no lure to an aspirant for the responsibilities and hardships and the too-often thankless tasks of the rural health officer.

Health Officer Courses.— During the year the special courses of instruction for health officers have been continued at New York city, Syracuse and Albany. A total of more than 600 health officers have either completed or are now taking one or the other of these courses. As a result of these elementary courses of instruction the work of the local health officers of the State has greatly improved.

Institutes for Public Health Nurses.— The Council gave its approval to a new field of emergency educational work — short intensive courses of instruction for public health nurses, especially for those already in the field. These courses or "Institutes" have been of two weeks' duration and have been given in New York, Syracuse and Albany. It is hoped that funds will be made available so that these Institutes may be made an annual feature. Attached as Appendix III are programs of one course for health officers and one of the institutes for public health nurses.

Poliomyelitis.— During the summer of 1921 a severe outbreak of acute anterior poliomyelitis occurred. This centered chiefly in and about the city of Utica — about one-third of the cases occurring in this district. In the control of this situation the Division of Communicable Diseases was assisted by the active cooperation of one of the members of the Council, Dr. Flexner, who not only advised with the Division but addressed the physicians of the district involved and aided them by his extensive knowledge and wide experience with this disease.

Tuberculosis Hospitals.— The Council caused an investigation to be made of the problem of dealing with disorderly and incorrigible patients in the tuberculosis hospitals of the State. The report of this investigation shows that advantage is not being taken of the existing provisions of the law. A large percentage of these patients have been discharged from the hospitals instead of having been kept there under legal restraint. The advisability of so amending the law that the hospital superintendent may bring about the commitment to a penal institution of a patient who enters the hospital vountarily and who conducts himself in a disorderly manner while in the institution, by providing for one hearing before a magistrate, instead of two hearings — one before the health officer and one before the magistrate — as the law now by implication requires, should be considered.

Sanitary Condition of Palisades Interstate Park.— The report of the inspection of the sanitary conditions of the Palisades Interstate Park by the Division of Sanitary Engineering of the State Department of Health was considered by the Council. A most thorough investigation was made, special consideration being given to water supplies and methods of sewage disposal of the various camps in the park, as well as of the bathing beaches maintained by the park along the Hudson river. In a large number of instances it was found that the water supplies were subject to active pollution and recommendations for their abandonment and for insuring safe water supplies were made. In most instances it was found that the methods of sewage disposal were adequate. In one instance, however, it was reported that sewage was being pumped into the Hudson river in close proximity to one of the bathing beaches; this should be discontinued. The Council urges that the recommendations embodied in this report be called to the attention of the Palisades Park Commission and that they be carried out at a date as early as possible.

Child Health Districts.— Following a careful study of the conditions of child health the Council recommends:

(1) That boards of supervisors of counties be authorized to constitute a county or part of a county as a child health district and to provide for such district a child health board authorized and equipped to take all suitable steps for the protection and welfare of maternity and infancy and for the protection of the health of the children generally. Among the duties and powers of such child health boards when established should be the following:

(a) the establishment of child consultation clinics at which prospective mothers can secure medical examination and advice, and at which babies may be examined and their mothers advised as to their care and treatment;

(b) the employment of visiting public health nurses to visit and advise with expectant mothers;

(c) the employment, where needed, of domestic aids to assist for a few days when no other help is available at the time of child birth in the care of the newborn baby, the care of older children, and in other urgent household duties, under the care of the public health nurse.

(2) That the Division of Child Hygiene of the State Health Department be provided with such additional help as may be needed for assisting in the establishment of effective supervision of the local child health boards.

(3) That provision be made for a more efficient medical inspection of school children, especially in rural districts, and for the correction of defects discovered among them.

(4) That by all practicable methods the discovery and correction of malnutrition among school children, preventive and corrective dental care, and special care for children exposed to tuberculosis be encouraged.

All of which is respectfully submitted.

Dated, *January* 31, 1922.

HERMAN M. BIGGS,
Chairman.
HOMER FOLKS,
Vice-Chairman.
SIMON FLEXNER,
T. MITCHELL PRUDDEN,
JACOB GOLDBERG,
HENRY N. OGDEN,
MRS. ELMER BLAIR,
EDWARD H. MARSH,
Secretary.

APPENDIX I

AMENDMENTS TO SANITARY CODE

CHAPTER II

Communicable Diseases

The following amendments to the Sanitary Code were adopted by the Public Health Council during the year 1921:

Regulation 2-b of Chapter II of the Sanitary Code is hereby amended to read as follows:

Regulation 2-b. Rabid or Vicious Animals.— It shall be the duty of every physician or other person to report to the local health officer within whose jurisdiction such person is, the full name, age and address of every person who has been bitten (a) by a rabid animal, (b) by an animal suspected of being rabid, within twenty-four hours from the time when such fact comes to his knowledge.

It shall be the duty of the health officer to transmit promptly these reports to the state department of health.

Every animals that has rabies, or that shows symptoms of rabies, or has been bitten by another animal affected with or showing symptoms of rabies, shall be confined under close observation in some secure place by the person owning or having possession of such animal for such length of time as may be deemed necessary by the local health officer for the purpose of determining whether such disease exists. In the event that no person is found owning or having possession of such animal, confinement shall be made or provided for by the local health officer.

Every health officer shall require the confinement under close observation of any animal of a kind subject to rabies which has attacked or bitten any person, and which in his judgment is vicious or unsafe to be at large, for such time as he regards as necessary, or he may cause such animal to be killed. Whenever any animal which has bitten any person and which has had rabies or any symptoms of rabies dies or is killed it shall be the duty of the health officer to see that the head of the animal is at once removed and sent with all data to the state veterinary college at Cornell for examination, and all the facts shall also be immediately reported to the state department of health.

This regulation as amended took effect January 1, 1922.

Regulation 10 of Chapter II is hereby amended to read as follows:

Regulation 10. Diphtheria; Material for Cultures to be Submitted.— In every case of illness which there is reason to suspect is diphtheria, it shall be the duty of the attending physician or, if the local health authorities so require, of the health officer promptly to take material for cultures from the troat of the suspected person and submit the same for examination to a laboratory approved for this purpose by the state commissioner of health.

This regulation as amended took effect January 1, 1922.

Regulation 10-a of Chapter II is hereby amended to read as follows:

Regulation 10-a. Typhoid or Para-Typhoid Fever; Samples of Blood to be Submitted.— In every case of illness which there is reason to suspect may be typhoid or para-typhoid fever it shall be the duty of the attending physician to take a sample of the blood of the suspected person and submit the same for an agglutination test to a laboratory approved for this purpose by the state commissioner of health.

This regulation as amended took effect January 1, 1922.

Regulation 34 of Chapter II is hereby amended to read as follows:

Regulation 34. Quarantine When a Patient is Not Properly Isolated.— When any case of diphtheria, encephalitis lethargica, epidemic serebrospinal meningitis, measles, scarlet fever, smallpox, poliomyelitis, acute anterior (infantile paralysis), or typhus fever is not or cannot be properly isolated on the premises and cannot be removed to a suitable hospital, it shall be the duty of the local health officer to forbid any member of the household from leaving the premises, except under such conditions as he may specify.

This regulation as amended took effect January 1, 1922.

Regulation 36 of Chapter II is hereby amended to read as follows:

Regulation 36. Minimum Period of Isolation.— For the purposes of this code, the minimum period of isolation is hereby declared to be as follows:

Chickenpox, until twelve days after the appearance of the eruption and until the crusts have fallen and the scars are completely healed.

Diphtheria (membranous croup), until two successive cultures taken from the nose and throat at intervals of not less than twenty-four hours, have been examined and found negative in a laboratory approved for this purpose by the state commissioner of health, the first of such cultures being taken not less than nine days from the day of onset of the disease.

Epidemic cerebrospinal meningitis, until two weeks after the temperature has become normal or until three successive cultures, obtained from the nasopharynx at intervals of not less than five days, shall be found free of meningococci upon examination in a laboratory approved for this purpose by the state commissioner of health.

Measles, until at least five days after the appearance of the rash.

Mumps, until two weeks after the appearance of the disease and one week after the disappearance of the swelling.

Poliomyelitis, acute anterior (infantile paralysis), until three weeks from the day of the onset of the disease.

Scarlet fever, until thirty days after the development of the disease and until all discharges from the nose, ears and throat, or suppurating glands have ceased.

Smallpox, until fourteen days after the development of the disease and until scabs have all separated and the scars completely healed.

Typhoid or para-typhoid fever, if the patient's occupation involves the handling of milk, dairy products, or other food, until all signs of the disease, or all secondary or complicating infections incited by the agents of these diseases have disappeared, and until two successive specimens of the intestinal discharges of the patient have been taken at an interval of not less than seven days and have been examined in a laboratory approved for this purpose by the state commissioner of health and found to be free from typhoid or para-typhoid bacilli.

Whooping cough, until eight weeks after the development of the disease or until one week after the last characteristic cough.

This regulation as amended took effect January 1, 1922.

Chapter II of the Sanitary Code is hereby amended by adding thereto a new regulation to be known as regulation 41-a, and to read as follows:

Regulation 41-a. Notification of Diarrheal Outbreaks.— Whenever there shall occur in any municipality an outbreak or an unusual prevalence of diarrhea, gastroenteritis, enteritis, colitis, enterocolitis, cholera nostra, cholera infantum or other disease in which diarrhea is a prominent symptom it shall be the duty of the health officer to report immediately the existence of such outbreak to the state department of health by telegraph or telephone. Local health officers shall exercise due diligence in discovering the occurrence of such outbreaks or the unusual prevalence of such diseases.

This new regulation took effect November 1, 1921.

CHAPTER VII

Miscellaneous

Regulation 6-a of Chapter VII of the Sanitary Code is hereby amended to read as follows:

Regulation 6 a. Manufacture or Sale of Articles Which May Be Contaminated with Anthrax.— No person shall manufacture, sell or offer for sale a shaving or lather brush containing horsehair.

This regulation shall take effect throughout the state of New York, except in the city of New York, on the first day of January, 1922.

APPENDIX II

Qualifications of Sanitary Supervisors

Sanitary Supervisor, State Department of Health. $3,500. Age limits, 26 to 50 years. The appointee will have administrative health control as direct representative of the State Commissioner of Health in a district comprising several counties. Candidates must be physicians and graduates of recognized schools of medicine. They shall (a) have served as health officer of a city, town or village having a population of not less than 5,000 persons for a period of at least four years; or (b) shall have received instruction approved by the Public Health Council, or a duly authorized committee thereof, in sanitary science, including five hours of instruction per week during the school year in an educational institution, and shall have had at least two years of experience in public health work; or (c) shall have received a degree, certificate or diploma in public health, granted after the completion of a course approved by the Public Health Council, in an educational institution; or (d) shall have submitted proof satisfactory to the Public Health Council, or a duly authorized committee thereof, that they have actually engaged in public health work of such a character as shall qualify them for the duties of the position. Appointees will not be allowed to engage in the regular practice of medicine or in any other regular occupation or business which will interfere with the full discharge of their duties. Subjects of examination: Written examination relating to the duties of the position, relative weight, 4; education, training, experience and personal qualifications, relative weight, 6. An interview may be required.

APPENDIX III

INSTITUTE FOR PUBLIC HEALTH NURSES OF NEW YORK STATE

Given by the State Department of Health in New York City

The New York State Department of Health will conduct a two weeks' institute in New York city, from June 13 to June 25, especially for the benefit of the public health nurses of the State who have not previously had an opportunity to receive instruction in the special lines considered.

The work of the institute will include all phases of public health nursing from both the technical and administrative standpoints. The course will consist of thirty-nine hours devoted to didactic lectures and thirty-six hours to field work, upon the completion of which an examination will be given to test the knowledge of the student in the subjects covered.

The following shows the subjects to be considered and the number of hours to be devoted to each:

SUBJECT	Lecture hours	Field work hours
Child Hygiene	8	9
Industrial Hygiene	2	3
Milk	2	6
Bacteriology	2	6
Vital Statistics	2	..
Communicable Diseases	7	3
Tuberculosis	2	3
Venereal Diseases	2	3
Sanitation	1	3
Public Health Law and Administration	2	..
Mental Hygiene	1	..
Dental Hygiene	1	..
Personal Hygiene	1	..
Public Health Education	1	..
Housing	1	..
Diseases of Adult Life	1	..
Social Aspects of Public Health Nursing	1	..
Food and Nutrition	2	..
Total	39	36

	9–10	10–11	11–12	12–1	1–2	2–3	3–4	4–5
Mon. 13th	Registration	Bacteriology Dr. Noble	Milk Dr. Schroeder	Communicable Diseases (Exanthemata) Dr. Marsh		BACTERIOLOGICAL LABORATORY		
Tues. 14th	Industrial Hygiene Dr. Harris	Bacteriology Dr. Noble	Milk Dr. Schroeder	Prenatal Hygiene Dr. Baker		BACTERIOLOGICAL LABORATORY		
Wed. 15th	Industrial Hygiene Dr. Harris	Dental Hygiene Dr. Leak	Vital Statistics Dr. Guilfoy	Infant Welfare Dr. Baker		Food & Nutrition Miss Winslow	Communicable Diseases Dr. Brooks	Measures to be take to prevent the spread of infection (disinfection) Dr. Wilson
Thurs. 16th	Infant Welfare Dr. Baker	Infant Welfare Dr. Baker	Vital Statistics Dr. Guilfoy		Housing Dr. Harris	Food & Nutrition Miss Winslow	Communicable Diseases Dr. Brooks	Public Health Education Mr. Rickards
Fri. 17th		INDUSTRIAL HYGIENE—Field Work Dr. Harris				INSPECTION OF PASTEURIZING PLANT Dr. Schroeder		
Sat. 18th	Hygiene of Pre-school Child Dr. Baker	Venereal Diseases Dr. Marsh	Venereal Diseases Dr. Lawrence			INSPECTION OF A DAIRY Dr. Schroeder		
Mon. 20th	A—Venereal diseases at Kingston Avenue Hospital—Dr. Wilson B—Child hygiene field work—Dr. Baker C—Communicable diseases at Willard Parker Hospital—Dr. Giddings					Social Aspects of Public Health Nursing Mr. Burritt	The Enteric Diseases Dr. Krumwiede	Diseases of Adult Life Dr. Longcope
Tues. 21st	A—Child hygiene field work—Dr. Baker B—Communicable diseases at Willard Parker Hospital—Dr. Giddings C—Venereal diseases—Kingston Avenue Hospital—Dr. Wilson					I. Tuberculosis field work—Dr. Harris II. Public health exhibit at American Museum of Natural History—Dr. Marsh		
Wed. 22d	A—Communicable diseases at Willard Parker Hospital—Dr. Giddings B—Venereal diseases at Kingston Avenue Hospital—Dr. Wilson C—Child hygiene field work—Dr. Baker					I. Public health exhibit at American Museum of Natural History—Dr. Marsh II. Tuberculosis field work—Dr. Harris		
Thurs. 23d		CHILD HYGIENE—Individual Field Work			Mental Hygiene Dr. Kirby	Personal Hygiene Dr. Overton	Tuberculosis Dr. Lent	Public Health Law & Administration Dr. Sears
Fri. 24th		CHILD HYGIENE—Individual Field Work			Hygiene of School Child Dr. Baker	Epidemiology Dr. Godfrey	Tuberculosis Dr. Lent	Public Health Law & Administration Dr. Sears
Sat. 25th	Hygiene of School Child Dr. Baker	Hygiene of School Child Dr. Baker	Epidemiology Dr. Godfrey	Sanitation Mr. Holmquist		EXAMINATIONS		

The following have consented to participate in the institute in the capacity of instructors:

Dr. S. Josephine Baker, Director, Bureau of Child Hygiene, New York City Department of Health.
Dr. Paul B. Brooks, Assistant Director, Division of Laboratories and Research, New York State Department of Health.
Mr. Bailey B. Burritt, Director, Association for Improving the Condition of the Poor.
Dr. E. M. Giddings, Resident Physician, Willard Parker Hospital.
Dr. Edward S. Godfrey, Jr., Director, Division of Communicable Diseases, New York State Department of Health.
Dr. William H. Guilfoy, Registrar of Vital Statistics, New York City Department of Health.
Dr. L. I. Harris, Director, Bureau of Preventable Diseases, New York City Department of Health.
Mr. C. A. Holmquist, Sanitary Engineer, New York State Department of Health.
Dr. George C. Kirby, Director, Psychiatric Institute.
Dr. Charles Krumwiede, Assistant Director, Research Laboratory, New York City Department of Health.
Dr. Joseph S. Lawrence, Director, Division of Venereal Diseases, New York State Department of Health.
Dr. W. H. Leak, Supervisor, Oral Hygiene, New York County Chapter American Red Cross.
Dr. Malcolm F. Lent, Director, Division of Tuberculosis, New York State Department of Health.
Dr. W. T. Longcope, Attending Physician, Presbyterian Hospital, New York City.
Dr. Edward H. Marsh, Consultant in Venereal Diseases, New York State Department of Health.
Dr. Willis C. Noble, Assistant Director, Division of Laboratories and Research, New York State Department of Health.
Dr. Frank Overton, Sanitary Supervisor, New York State Department of Health.
Mr. B. R. Rickards, Assistant to the Deputy Commissioner, New York State Department of Health.
Dr. M. A. Schroeder, Bacteriologist, Research Laboratory, New York City Department of Health.
Dr. F. W. Sears, Sanitary Supervisor, New York State Department of Health.
Dr. R. J. Wilson, Director, Bureau of Hospitals, New York City Department of Health.
Miss Emma A. Winslow, Lecturer, Department of Economic and Social Science, Teachers' College.

The institute will be limited to thirty nurses, as it is thought that such limitation will bring about closer contact between instructors and students and the value of the instruction will thus be enhanced.

No charge will be made for tuition. The expenses therefore will be limited to the cost of lodging, subsistence and travel, and need not exceed twenty dollars per week.

Most of the didactic teaching will be given at the New York University, and Bellevue Hospital Medical College, 26th street and First avenue, New York city. Announcement will be made during the institute of the places where the field work instruction will be given.

For further particulars, address Dr. E. H. Marsh, State Department of Health, 25 West 45th street, New York city.

APPENDIX III

Course for Health Officers and Physicians, New York University

With the cooperation of the Health Department of New York city, New York University provides two courses in preventive medicine which meet the requirements established by the Public Health Council of New York State. Although intended primarily for health officers, anyone who is interested in public health problems and who possesses the educational qualifications may take these courses.

The first or *residence* course begins September 15, 1920, and requires attendance every Wednesday for a period of twenty-four weeks, the work being divided into fall and spring semesters with an interval of three months during the winter to accommodate health officers in rural districts, for whom traveling is difficult at this time.

This course covers the work of the health officer in all the usual phases of preventive medicine, both technical and administrative. The program as outlined below shows its scope.

The following textbooks are recommended for reference and study in connection with the lectures and field work. The university is able to supply these enrolled students at 25 per cent discount on the publishers' price.

System of Hygiene and Preventive Medicine, W. H. Park, *or* Preventive Medicine and Hygiene, M. J. Rosenau	$7 50
Pathogenic Micro-Organisms, Park & Williams	6 00
Sources and Modes of Infection, C. V. Chapin	3 50
Manual for Health Officers, J. S. MacNutt	3 50
Sanitation, Water Supply and Sewage Disposal, W. P. Gerhard	2 00
Health Work in Schools, Hoag & Terman	1 85

In addition to the foregoing, several miscellaneous pamphlets are furnished to the students at cost.

The fees for the course include a five-dollar matriculation fee for those who have not been previously matriculated with New York University, and a twenty-five-dollar tuition fee. Students of previous years in any of the public health courses are invited to attend as many sessions as possible without additional charge.

Program

FIRST DAY

9:30 A. M. Introduction to course
Dr. William H. Park, Professor of Bacteriology and Hygiene, New York University

10-12 M. Lecture and demonstration of general bacteriology and technique
Dr. Willis C. Noble, Assistant Professor of Hygiene, New York University

1- 3 P. M. Practical laboratory work: Preparing, staining and examining specimens
Dr. Noble

SECOND DAY

9:30 A. M. Quiz on previous week's work
10-12 M. Diphtheria and the exanthemata; diagnosis and treatment
Dr. Giddings, resident physician, Willard Parker Hospital
1- 3 P. M. Diphtheria· laboratory diagnosis; the Schick test· antitoxin
Dr. Park; Dr. E. J. Banzhof, Assistant Director, Department of Health, New York City

THIRD DAY

9:30 A. M. Quiz on previous week's work
10-12 M The enteric diseases, symptomatology, epidemiology, control of, etc.
Dr. Charles Krumwiede, Jr., Assistant Professor of Bacteriology and Hygiene, New York University
1- 3 P. M. Laboratory diagnosis of the enteric diseases, blood cultures, agglutination reactions, etc.
Dr. Noble

FOURTH DAY

10:00 A. M. Visit to public health exhibit, American Museum of Natural History
Lecture on water purification and sewage disposal
Mr. A. J. Provost of the Pease Laboratories
7:00 P. M. Inspection of a water filter
Mr. Provost

FIFTH DAY

9:30 A. M. Quiz on previous week's work
10:00 A. M. Lecture on milk, and milkproducts; production, pasteurization, etc.
Dr. M. A. Schroeder, Bacteriologist, Department of Health, New York City
1- 3 P. M. Milk. Laboratory examination
Dr. Schroeder

SIXTH DAY

10:00 A. M. Inspection of pasteurization plant
Dr. Herbert D. Pease, Director of Pease Laboratories, New York City
* *P. M.* Inspection of sewage disposal plant
Mr. Provost

SEVENTH DAY

* Dairy inspection and scoring
Dr. Schroeder

EIGHTH DAY

9:30 A. M. Inspection of slaughter houses
Dr. Aaron Silkman, Chief Veterinarian, Department of Health, City of New York
1- 3 P. M. Lecture—Cold storage
Dr. Pease
* Inspection of cold storage plant

NINTH DAY

10:00 A. M. Child hygiene, prenatal care, infant care, care of pre-school child, school child
Dr. S. Josephine Baker, Director, Bureau of Child Hygiene, Department of Health, City of New York
1- 3 P. M. Child hygiene continued

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* Hour to be announced

TENTH DAY

10:00 A. M. Child hygiene—inspection of baby welfare station. School medica inspection

Dr. Baker

1- 3 P. M. The management of communicable diseases in the schools

Dr. John A. Smith, Secretary, New York State Department of Health

ELEVENTH DAY

9:30 A. M. Quiz on previous week's work

10-12 M. Cerebrospinal meningitis; differential diagnosis, spinal puncture; administration of antimeningococcus serum

Dr. Josephine B. Neal, Bacteriologist, Department of Health, City of New York

1- 3 P.M. Pneumonia, clinical types; bacteriology of; type differentiation of pneumococcus; administration of antipneumococcus serum

Dr. Krumwiede

TWELFTH DAY

9:30 A. M. Quiz on previous week's work

10-12:30 M. Syphilis—laboratory methods of diagnosis; demonstration of *Treponema pallidum.* The complement fixation test

Dr. Noble

1:30-3:30 P. M. Syphilis—clinical lecture; demonstration of administration of arsphenamine

Dr. William B. Trimble, Professor of Dermatology and Syphilology, New York University

THIRTEENTH DAY

9:30 A. M. Quiz on previous week's work

10-12 M. Tuberculosis: Laboratory diagnosis of

Dr. Noble

1- 3 P.M. Tuberculosis: Early diagnosis of; treatment and control of

Dr. E. S. McSweeny, former Director of Sea View Sanatorium; former Supervisor of Tuberculosis, New York State Department of Health

FOURTEENTH DAY

9:30 A. M. Quiz on previous week's work

10-12 M. Manufacture and use of smallpox virus and rabies virus

Dr. Bertha Von H. Anthony, Bacteriologist, Department of Health, City of New York

1- 3 P. M. Smallpox: Differential diagnosis, epidemiology, etc.

Dr. William L. Somerset, Chief Diagnostician, Department of Health, City of New York

FIFTEENTH DAY

10:00 A. M. Oral examination

Drs. Park, Noble, Marsh and Mr. Provost

1:00 P. M. Written examination

SIXTEENTH DAY

10:00 A. M. Diseases of adult life

Dr. Hermann M. Biggs, Commissioner of Health, State of New York

1- 2 P. M. Duties of health officer with the insane

Mr. Everett L. Elwood, Secretary, State Hospital Commission

2- 3 P. M. Mental hygiene

Dr. George H. Kirby, Physician, Manhattan State Hospital for Insane

Seventeenth Day

9:30 A. M. Quiz on previous week's work

10-12 M. Rural hygiene

Dr. Frank Overton, Sanitary Supervisor, New York State Department of Health

1- 3 P. M. Industrial hygiene

Dr. Louis I. Harris, Director, Bureau of Communicable Diseases, Department of Health, City of New York

Eighteenth Day

10-12 M. Routine duties of a health officer

Dr. Perley H. Mason, Sanitary Supervisor, New York State Department of Health

1- 3 P. M. Hospital management of communicable diseases; disinfection

Dr. Robert J. Wilson, Assistant Professor of Bacteriology, New York University

Nineteenth Day

9:30-12 M. Parasitology of the blood and the intestinal tract

Dr. Arthur Mandel, Professor of Clinical Pathology, New York University

1- 3 P. M. Immunity—lecture

Dr. Krumwiede

Twentieth Day

9:30-12 M. Parasitology of blood and the intestinal tract

Dr. Mandel

1- 3 P. M Epidemiology—lecture

Dr. George A. Soper, former Major, Sanitary Corps, United States Army

Twenty-first Day

9:30 A. M. Quiz on previous week's work

10-12 M. Suppression of nuisances—lecture and discussion

Dr. Overton

1:30-3 P. M. Address

Dr. Royal S. Copeland, Commissioner of Health, City of New York

Twenty-second Day

9:30 A. M. Quiz on previous week's work

10-12 M. Vital statistics—lecture and discussion

Dr. William H. Guilfoy, Registrar, Department of Health, City of New York

1- 3 P. M. Public health nursing

Dr. John A. Smith

Twenty-third Day

9:30 A. M. Quiz on previous week's work

10-12 M. The health officer and the public health law

Mr Joseph A. Warren, Counsel, New York State Department of Health

1- 3 P. M. Health administration in small communities

Dr. Charles C. Duryee, Sanitary Supervisor, New York State Department of Health

Twenty-fourth Day

Final examinations

The second or *reading* course, which consists largely of reading, requires but one week of residence in New York city, and is given for the benefit of health officers who reside at such a distance from the city that attendance at the residence course is impossible. This course may be begun at any time and *must* be completed within one year of the time of enrollment unless some special reason exists which makes this impossible.

For convenience, the work is divided into ten subjects, each of which is to be completed and to be followed by an examination before the next subject is commenced. The purpose of the examination, which is taken at home, is to test the health officer's general understanding of the completed subject. The subjects may be taken in any order desired, but it is recommended that the order given below be followed —

1. Communicable diseases
2. Tuberculosis
3. Bacteriology and disinfection
4. Routine work of a health officer
5. Child hygiene
6. Milk and other foods
7. Water supply and waste disposal
8. Hygiene of home and workshop
9. Mental diseases from the public health standpoint
10. Vital statistics

It is permissible for the student to consult textbooks before answering the questions. The papers are reviewed and rated by competent examiners. A series of questions which act as a guide to the study of each subject have been prepared and are forwarded as required.

The textbooks which are recommended and upon which the examination questions are based are the same as those previously mentioned in connection with the residence course.

The week's work in the city can be taken at the end of the course, or at an earlier period if the prescribed reading on communicable diseases, water, milk and bacteriology has been completed. The residence week is held three or four times during each year, but only when ten or more students desire to attend. The work is divided as follows:

MONDAY

9:00 A. M. Registration

9:00 A.M.-1:00 P. M. Bacteriological Laboratory, University and Bellevue Hospital Medical College, 26th street and First avenue. Study of bacteriological and serological methods of diagnosis, diagnostic examinations for diphtheria, typhoid fever, malaria, tuberculosis, gonorrhea and syphilis. Bacteriological examinations of milk and water

Drs. Park, Krumwiede, Noble and Zingher

2:00 P. M.-6:00 P. M. Willard Parker Hospital and Research Laboratory of the Department of Health, 16th street and East river. The diagnosis and treatment of measles, scarlet fever, diphtheria, whooping cough and any other communicable diseases located at the time in the hospital; the methods of producing antitoxins, Pasteur treatment, vaccine virus and other protective substances; disinfection

Drs. Williams, Banzhof, Neal, Anthony, Schroeder, Giddings, Thompson and Hatfield

TUESDAY

Same schedule as Monday

WEDNESDAY

* Inspection of the process of pasteurizing milk, the hygienic exhibit at the American Museum of Natural History and conference on the care of milk, the purification of water and the disposal of sewage

Drs. Pease, Schroeder and Mr. Provost

THURSDAY

* Inspection of a water and sewage purification plant, of an infant milk station and of a health center

Drs. Pease, Schroeder, Mr. Provost and inspectors of the Department of Health

FRIDAY

9:00 A. M.-1:00 P. M. Food, meat and factory inspection

Dr. Silkman

2:00 P. M.-4:00 P. M. Demonstration of the technique of treating syphilis. A consideration of the handling of tuberculosis from the standpoint of the health officer

Drs. Harris, Hubbard, McSweeny and Marsh

SATURDAY

9:00 A. M.-11:00 A. M. Written examinations
11:00 A. M.-1:00 P. M. Optional inspections

The fee for the above course is $25 in addition to the matriculation fee of $5 for those who have not previously attended the university. The necessary books may be borrowed from the university upon the payment of a fee of $15, ten of which will be returned to the student if the books are returned *in good condition within one year of the time of obtaining them.*

CERTIFICATE

Students who successfully complete either of the above courses will be granted an appropriate certificate.

REGISTRATION

Those desirous of registering for either of these courses should address Dr. Edward H. Marsh, Assistant Director, Room 804, 25 West 45th street, New York city; or, Dr. William H. Park, Director, 338 East 26th street, New York city.

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* Hours to be announced at Monday session

DIVISION OF PUBLIC HEALTH NURSING

DIVISION OF PUBLIC HEALTH NURSING

HERMANN M. BIGGS, M.D., *Commissioner of Health, Albany, N. Y.:*

SIR.— I have the honor to submit to you the attached report of the Division of Public Health Nursing for the calendar year 1921.

Respectfully submitted
MATHILDE S. KUHLMAN R. N.
Director

January 26, 1922

The work of the Division of Public Health Nursing has been marked during the year 1921, by additional demands in the administrative duties, and by increasing activities in field work through the staff of supervising nurses.

Because of the nature of the work this Division has been largely engaged in assisting other divisions of the department in carrying out their programs, and has given supervision through the supervising nurses and correspondence, to the local nurses engaged in public health nursing throughout the State.

A roster of all public health nurses in New York State (outside of New York city) numbering over 1,000 is kept up to date by this Division, and supervising nurses visit local nurses once in six months or more often where necessary. Lectures on public health nursing subjects have been given to student nurses, hospital alumnae associations and groups of public health nurses by the Director. Institutes for Public Health Nurses were conducted in New York, Syracuse and Albany and plans formulated for an Institute to be held in Buffalo early in 1922. The Institutes consist of a two weeks' series of lectures on all phases of Public Health Nursing by members of the staff of the State Department of Health and selected specialists, with demonstrations and observations of field work and visits to institutions and industries. Thirty to fifty nurses have enrolled for each Institute. They expressed much appreciation of this educational opportunity.

Supervising nurses of this division assisted in organizing and conducting group consultation clinics in three counties. This consisted of field work preliminary to the clinic and nursing service in clinics for chest examination, pediatrics, orthopedics, gynecology, diseases of adult life, laboratory examinations, x-rays and other branches, usually conducted in a school building as one clinic with a rural county as the field of activity.

Seven supervising nurses have given aftercare to 1,498 patients crippled from infantile paralysis. The aftercare consists of visits under the supervision of the family physician and the state orthopedic surgeon, giving muscle exercises and teaching members of the family the care of such patients, the proper adjustment of braces and apparatus.

Clinics were organized and nursing service given in 62 localities and patients visited and instructed in 532 communities. Details of this work are given in the report of the Division of Child Hygiene.

Two supervising nurses are assigned to the Division of Tuberculosis, to instruct and supervise county and city nurses doing tuberculosis work; to visit dispensaries and assistant nurses in the conduct of their work and in record keeping and submitting properly made out reports.

Tuberculosis surveys were conducted in three whole counties and parts of 2 others. Thirty-one hospitals and dispensaries were visited in the interest of tuberculosis nursing, 30 county nurses were visited and instructed, 68 conferences were held with health officers, physicians, nurses, members of boards of supervisors and local tuberculosis committees, and other organizations and individuals interested in the work. One hundred and six patients were visited and instructed in home care and in regard to clinics and sanatoria.

In the work of child hygiene the supervising nurses assisted in conducting children's health conferences in 198 localities in the State. In 30 extremely rural localities where no local nurses are employed, follow-up work of these conferences was done. Visits were made to physicians and to parents in the interest of securing such corrective treatment as recommended by the physician. Much educational work for child care was accomplished in this way. One hundred and ninety-nine interviews were held with health officers, physicians, members of committees and women's clubs in the interest of children of pre-school age. Nineteen nurses were given special assistance and instruction. Six addresses were made and 27 child welfare stations, day nurseries and boarding homes were visited and inspected by supervising nurses and assistance rendered in establishing stations.

Communicable disease work consisted of investigations and visits of instruction in 73 localities in the care, prevention and control of typhoid fever, smallpox, diphtheria, scarlet fever, measles, whooping cough and dysentery; securing specimens for laboratory examinations where necessary under direction of sanitary supervisor or local health officer. Nurses assisted with vaccinations and Schick tests. Sixty-eight field public health nurses were instructed and assisted in public health nursing of communicable disease.

Meetings of groups of school teachers were attended by one supervising nurse and addresses given in control of communicable disease in schools.

For the purpose of epidemiological study by the Division of Communicable Diseases, one nurse was assigned to a survey of goitre cases in four counties and 35 communities in which a total of 669 cases were found.

The supervising nurse in charge of midwives and day nurseries inspected and supervised 432 licensed midwives in the State outside of New York city. Special visits were made and instruction given to 43 midwives and 47 nurses. Sixteen birth registrations were investigated where incomplete information was given. Eleven day nurseries were visited and inspected. Thirty-two conferences were held with health officers and physicians.

Much time was given to general clerical work and correspondence in connection with the work of midwives and in securing affidavits and preparing evidence on 12 cases where licenses were refused.

In the venereal disease work, supervising nurses attended 156 clinics which were held in 38 places. Nurses in the field were instructed and assisted in carrying on this work; social service follow-up work was done in connection with four clinics. Conferences and interviews were held with health officers, physicians, nurses and members of boards of health. A survey was conducted in 36 hospitals in the interest of securing information regarding blood examinations. Details of work are given in the report of the Division of Venereal Diseases.

Four supervising nurses were on duty on five of the Indian Reservations of the State until July 1 when lack of appropriation for salaries of two supervising nurses made it impossible to continue the work on more than two of the reservations, the Onondaga and St. Regis.

Children's conferences and tuberculosis clinics were held on the reservations. The nurses give instruction and demonstration in caring for sick and well babies, in supervision, education and care of tuberculous patients and contacts. Much has been accomplished by this work on the reservations in an educational way; less time is spent in giving actual bedside care and more has been done in class instruction and demonstration.

These nurses assist in the prevention of blindness, in securing birth registrations, they give supervision to midwives on the reservation and are vigilant in detecting the first evidence of any communicable disease which may affect the surrounding communities as well as the residents of the reservations.

One supervising nurse in the Division of Public Health Education works in cooperation with farm bureaus for the purpose of instructing rural communities in the elementary principles of home nursing, hygiene and preventive measures. Addresses were given in 160 communities with a total attendance of 7,067 persons. Two hundred and thirty-two demonstrations were made in the care of the sick and in class instruction.

One supervising nurse assists the Director of Public Health Education in securing information and educational matter for the Public Health Nurses' Bulletin and other department publications.

The state supervising nurses are largely engaged in assisting municipalities in the prevention and control of communicable disease, especially where no public health nurse is employed in which case she demonstrates such service; she aids communities in securing proper nursing service where such is considered necessary and is desired by the residents; she educates and demonstrates in the care of the health of the child of preschool age; and supervises and standardizes the work of local nurses, assisting them in carrying on their work in the most efficient way.

DIVISION OF PUBLIC HEALTH EDUCATION

DIVISION OF PUBLIC HEALTH EDUCATION

HERMANN M. BIGGS, M.D., *Commissioner of Health, Albany, N. Y.:*

SIR.— I have the honor to submit the report of the Division of Public Health Education for the year 1921.

Respectfully submitted

B. R. RICKARDS

Director

January 16, 1922

Health News.— The 1921 issues of the HEALTH NEWS were devoted to a discussion of the following public health subjects: two numbers to the diseases of adult life, and one each to poliomyelitis, methods of making sanitary surveys, the control of venereal diseases, relation of the health work of the Red Cross to official state and local health work. The February number was composed of a retrospect of the work of the Department for the year 1920. The remaining issues contained important articles on the Schick test, communicable disease control, the standardization of anti-syphilitic therapy, spinal puncture in diagnosis and treatment, special educational needs of children, modern therapy in asthma and hay fever, group medicine, epidemic encephalitis and heliotherapy in tuberculosis. Each issue has contained an editorial on some timely and important phase of public health.

A questionnaire sent to the readers of the HEALTH NEWS showed approximately 70 per cent of those replying to be in favor of symposiums. Over 80 per cent were of the opinion that the HEALTH NEWS was successfully accomplishing its aims.

Public Health Nurses' Bulletin.—A monthly issue averaging eight pages, serves as an instrument to provide public health nurses, health officers, social workers, executive secretaries and related workers with the trend of movements which modify or define the duties and opportunities of public health nurses in New York State.

The following are some of the subjects presented during 1921: Group consultations for rural districts, rehabilitation of industrial cripples, prevention of epidemics, recent tendencies in the control of venereal diseases, the newer knowledge of nutrition, the use of volunteer service in public health work, prevention of dental caries, the public health nurse and vital statistics, institutes for public health nurses, the relation of nurses employed by private agencies to local health officers, and the relation of the state supervising nurse to the local public health nurse.

Health Officers' Bulletin.— This bulletin has continued to serve as a means of conveying to health officers in convenient form for ready reference changes and additions to the Sanitary Code and the Public Health Law, notices and programs of courses for health officers, instances of effective methods by which outbreaks of communicable disease have been prevented, special information regarding epidemics, legal opinions pertaining to the interpretation of health laws and regulations, and other official and semi-official information regarding which health officers should be promptly advised.

News Letters.— It is frequently important that prompt statewide publicity be given to facts concerning new health laws or regulations, the unusual prevalence of a communicable disease, methods of prevention of seasonal diseases or warning in regard to health menaces. During 1921 thirteen such news letters were sent to the daily and weekly newspapers of the State.

Addresses.— In the absence of a paid staff of lecturers, members of the regular staff and the sanitary supervisors have been called upon through this Division to respond to the numerous requests for addresses on special health topics. In addition several series of health lectures have been arranged and speakers furnished. This work can not be further developed and extended until lecturers are added to the Division, since the assignment of members of the regular staff to this work, takes them away from their regular duties.

Magazine Health Literature.— From time to time health hints and notes have been furnished to editors of Employees' Magazines of the State. These notes have been widely used. The possibilities in the way of spreading health information to the masses by this means is very great in view of the fact that the number of people who can be thus reached is in the neighborhood of 500,000. It is planned to make wider use of this method. Health notes have also been supplied to a number of health and medical journals.

Rural Health Campaign.— During the past year the Healthmobile campaign has been conducted along the same lines as heretofore, work being carried on in 21 counties of the State. The stress has been laid on child welfare and the Healthmobile has been used as an adjunct to child welfare clinics, motion pictures being shown in connection with the meetings and the car being used for the transportation of necessary equipment. It is gratifying that during the two years and more that this work has been in progress the car has kept every engagement, no cancellation of meetings scheduled having been necessary. This campaign continues to be very popular and calls are constantly being received from all parts of the State, the demand being far greater than can be met with the present facilities. On the whole, it is believed that this is one of the most worthwhile educational undertakings of the Department.

Finding from experience in this campaign that the rural districts of the State are most receptive and responsive to educational campaigns on health matters, the Department last year undertook, in cooperation with the Atlantic Division of the American Red

Cross and the State College of Agriculture at Ithaca, the production of a motion picture film showing in detail how the farmhouse may be equipped with a modern plumbing system without the assistance of trained plumbers. This film shows in two reels the whole process of installing modern plumbing in the rural home. It begins with the installing of simple pump and sink in the kitchen, then shows methods of connecting a tank and then having running water, and how later a water heating system can be added. Finally, the plumbing is completed by putting in a bathroom and proper sewage disposal plant. That there is a call for instruction along this line is proved by the many calls which are being received from all over the State for the use of this film. It is planned to put on a systematic campaign in connection with the farm bureaus in about twelve counties. Very cordial cooperation is assured and it is believed that this will be a most practical method of reaching the agricultural communities and of interesting them in better sanitation.

The usual routine work along exhibit lines has been continued. In accordance with policies of recent years, new motion pictures films have been purchased and are in constant demand and use. Eighteen films were shown 218 times during 1921, to a total of approximately 144,000 people. Our collection of lantern slides has been added to materially and has proved very serviceable. In a large proportion of cases the films and lantern slides have been shown in cooperation with meetings held by local agencies and it is felt that this service gives very practical support for many local health movements. Five regular lantern slides lectures were given thirty times to an estimated total attendance of 1,600.

There is a growing tendency to lay increasing stress on these activities rather than on the more formal exhibits in vogue in past years. Experience shows that the use of material of this character is more efficient, economical and generally desirable than the cumbrous exhibits of panels and models which so rapidly become obsolete.

The routing of a speaker, detailed by the Division of Public Health Nursing, to address audiences of rural women usually under the auspices of the Home Bureaus has also been under this Division and while not spectacular it is felt that this work has proved most valuable and is accomplishing a very useful purpose at small expense. In this manner 7,000 people have been instructed in home nursing, hygiene and the prevention of disease. The necessity for public health nurses in rural communities has been stressed in each instance and has been instrumental in the placement of such nurses.

General Public Health Literature.— This Division is responsible for the editing of all bulletins and reports issued by the Department and for the distribution thereof. During the year 453,122 pieces of printed matter were issued by this Division, of which 325,980 were monthly bulletins; 27,000 health circulars and pamphlets sent or given to persons requesting them; 63,530 baby books sent to young mothers and 22,560 pamphlets on suggestions to prospective mothers.

A bibliography for health officers similar to the bibliography for public health nurses issued last year, was prepared and given out to health officers attending the annual conference. With the cooperation of the State Medical Library and the Cornell University Library a complete set of all books listed was exhibited in the registration room of the Conference.

Annual Conference.— The annual conference of health officers and public health nurses was held September 13 to 15 at Cornell University, Ithaca, the preparation of the program and the arrangements being in charge of this Division. Thirty-five papers were read followed by interesting and instructive discussions. Among other important guests were Dr. Simon Flexner of the Rockefeller Foundation, Dr. Allan McLaughlin, Surgeon-General of the United States Public Health Service, Dr. W. F. Snow, Executive Secretary of the American Social Hygiene Association.

Clean-up Campaign.— Suggestions for organized community clean-up work were sent to every health officer during the early spring. A newspaper article outlining the necessity for the work and urging community action was sent to every newspaper in the State. The suggested methods and work apparently were carried out very generally throughout the State.

Aiding Communities in Securing Medical Service.— This work commenced in 1918, has been continued during the past year. Twelve communities have been supplied with physicians, (six through this Department) eight new communities have been added to the list while seven communities previously supplied have again requested assistance showing that physicians sent to them have stayed but temporarily. Ninety-eight physicians wrote for information regarding localities lacking medical service. This Division is doing all it can to alleviate this situation but with the average age of physicians in rural communities constantly increasing and young physicians refusing to take up rural practice conditions are steadily growing worse. Legislative action will ultimately become absolutely necessary if rural communities are to receive adequate medical service.

DIVISION OF TUBERCULOSIS

DIVISION OF TUBERCULOSIS

HERMANN M. BIGGS, M.D., *Commissioner of Health, Albany, N. Y.:*

SIR.— I have the honor to submit the annual report of the Division of Tuberculosis for the year 1921.

Respectfully submitted

FREDERICK W. McSORLEY

Director

February 14, 1922

In 1921 the Tuberculosis Division has continued the activities of the previous year and an attempt has been made, as far as possible, to increase the scope of the work.

With a small staff, 54 clinics have been held in 19 counties. The average attendance was about 30, giving a total of 1,604 patients examined, with the following results: 300 were found positive; 516 were suspicious, 572 needed observation; and 216 were negative. In the "observation" group have been placed those patients — especially children — who, while showing no particularly suggestive signs, were either contacts or below par physically.

Practically all the clinics have been held in the rural districts where hospitals with tuberculosis dispensaries, x-ray and other diagnostic aids were not available. There has been little publicity — the policy being to conduct the clinics on a consultation basis in conjunction with the local physicians. The physicians are invited to send selected cases and the nurses search out contacts. Each patient presents a card signed by his family physician, to whom a detailed report, giving the physical and x-ray findings, diagnosis, and recommendations, is mailed. As a result, practically all applicants for examination have symptoms suggesting pulmonary disease, those requiring care are placed under medical control, and better cooperation with the family physicians is secured. Many more of the local physicians are attending and assisting in the examination of their patients. The clinics, therefore, have an educational as well as a practical value since the physicians have an opportunity to correlate the physical and x-ray findings.

The portable x-ray outfit has been a great aid in diagnosis and has increased the interest in the clinics. Since January 1, 1921, 1,387 radiographs have been taken. The films are brought back to the main office, developed and interpreted and the findings added to the original clinic cards, which are filed for reference.

In New York State, exclusive of New York city, there are 37 county or city tuberculosis hospitals with a total bed capacity of 3,242. Representatives of this Division visit and inspect these institutions, confer with the superintendents and boards of managers and assist them to settle their problems. The superintendents of these hospitals conduct clinics and direct the tuberculosis activities in their counties.

The services of the field agent of the State Department of Health have been valuable in inspecting proposed sites, suggesting plans for new institutions and giving opinions regarding necessary changes or additions in those already in operation.

Two nurses are assigned to this Division; one assists at the clinics and one visits the county nurses. At present there are, engaged in tuberculosis work, 45 county nurses in addition to many others employed by public and private agencies. These nurses cooperate with the local physicians, assisting in the care of patients who are being treated at home. They instruct the patients and their families regarding prophylaxis, aid patients returning from sanatoriums to find proper employment, and do the advance work for clinics. Without their services the tuberculosis campaign could not be carried on successfully.

Reports of all new cases and deaths from tuberculosis are received by this Division, the information is checked and investigated when necessary, and the corrected reports are filed.

The special course of instruction for county hospital superintendents was conducted at Ray Brook in July. Other activities were: Cooperation with the Civil Service Commission in conducting examinations; aiding boards of managers in the selection of hospital superintendents; inspection of tuberculosis dispensaries; lectures and practical instruction in connection with the courses for health officers and nurses (given at Albany in April and December, and the course for nurses in New York in June) and lectures to pupil nurses and lay audiences in various towns and cities.

The following table shows the results of examinations made at the clinics held by this Division in 1921, classified according to different age groups:

AGE	POSITIVE		SUSPICIOUS		OBSERVATION		NEGATIVE		TOTAL		Grand total
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	
5.......	1	1	6	9	22	19	8	4	37	33	70
6–10.......	2	6	55	51	64	76	27	38	148	171	319
11–15.......	9	10	39	55	69	75	29	26	146	166	312
16–20.......	8	21	12	33	20	30	8	7	48	91	139
21–25.......	15	25	19	25	11	25	6	9	51	84	135
26–30.......	18	22	20	33	21	22	5	7	64	84	148
31–55.......	14	31	19	32	7	15	2	5	42	83	125
36–40.......	12	23	13	21	10	20	4	6	39	70	109
41–45.......	10	12	8	16	13	7	1	8	32	43	75
46–50.......	17	6	9	16	10	8	2	1	88	31	69
51–55.......	6	10	4	9	5	8	4	1	19	28	47
56–60.......	2	5	4	4	4	5	3	2	13	16	29
61–65.......	1	7	2	....	1	1	....	....	4	8	12
66–70.......	2	4	....	1	1	2	....	1	3	8	11
71–75.......	....	....	1	....	....	....	....	1	1	1	2
76–80.......	....	....	....	....	1	....	....	1	1	1	2
Total...	117	183	211	305	259	313	99	117	686	918	1,604

DIVISION OF VENEREAL DISEASES

DIVISION OF VENEREAL DISEASES

HERMANN M. BIGGS, M. D., *Commissioner of Health, Albany, N. Y.:*

SIR.— I have the honor to submit the following report of the activities of the Division of Venereal Diseases for the year 1921.

Respectfully

JOS. S. LAWRENCE

January 31, 1922 *Director, A. A. Surgeon*

During the year of 1921 the Division of Venereal Diseases joined in the general spirit of economy by reorganizing its staff and consolidating work where feasible. The educational, clinical and medical follow-up forces were each reduced as much as was practicable without seriously impairing their efficiency. As the work of the division is more definitely outlined now, it is possible to effect a fairly permanent organization.

Certain demonstrational work which was being conducted at the opening of the year was temporarily discontinued, for example, the assistance tendered the orphanages and state hospitals in making physical and serological examinations of their dependent population and initiating treatment with those found infected. When it was decided to discontinue the manufacture and distribution of arsphenamine the treatment of these dependents could no longer be undertaken by our agents and the work, valuable as it was conceded to be, was interrupted but with the hope that provision would soon be made for its completion.

Education

Considerable attention was given again this year to extending the several features of the educational program. A greater proportion of time was devoted to work in the rural districts than to that in cities, partly because of the solicitation of the very active Home Bureau organization and partly because of our desire to reach all people of the State. With the Home Bureau agents we extended our educational tours to 26 counties where a total of 315 lectures were delivered to an aggregate of more than 25,000 people who also received some of our pamphlets which were passed out at each meeting.

Distribution of Work According to Counties, done in Cooperation with the Home Bureau Organizations

County	No. of Meetings	Attendance
Allegany	7	244
Broome	10	658
Cayuga	7	153
Chenango	9	1,080
Cortland	3	136
Delaware	20	2,606
Erie	12	737
Essex	1	35
Herkimer	17	1,747
Jefferson	19	2,289
Lewis	3	410
Madison	6	570
Monroe	5	283
Nassau	4	125
Niagara	11	400
Oneida	24	1,047
Onondaga	5	270
Orleans	5	550
Otsego	10	530
Steuben	32	3,045
Suffolk	18	1,359
Sullivan	19	3,091
Tioga	16	942
Tompkins	8	220
Ulster	30	2,429
Westchester	14	574
Total	315	25,530

In the following counties the work was aided materially by the use of the field car: Broome, Delaware, Steuben, Sullivan, Tioga.

With the use of the American Social Hygiene Association field car, which is an automobile equipped with a moving picture machine, illustrating the lectures with films was made practicable in rural sections. The field car with its equipment made it practicable also to lecture to audiences at the county agricultural fairs. Almost 100,000 people were reached at these fairs.

County Fairs

With Field Car

PLACE	Date	Lecturer	Attendance exhibit	Number lectures	Attendance lectures
Whitney Point	8/15	Read	5,000	16	4,000
Waterloo	8/23	Read	....	19	2,800
Rome	8/29	Read	10,000	24	8,000
Rochester	9/ 5	Read	16,400	12	6,000
Bath	9/26	Read	25,000	28	20,000
Elmira	10/ 4	Read	12,000	12	1,600
Total with car — 6 fairs			69,000	111	42,400

Without Field Car

PLACE	Date	Lecturer	Attendance exhibit
De Ruyter	8/ 8	Read	1,500
Altamont	9/19	Guerard	20,000
Richfield Springs	9/26	Guerard	6,000
Dundee	10/10	Guerard	300
Total without car — 4 fairs			27,800

Summary

Fairs visited with field car	6
Fairs visited without car	4
Total number lectures given	111
Total attendance at lectures	42,400
Total attendance at exhibits	96,800

In the cities the educational work was done in cooperation with the health officer or with some voluntary organization. We effectively cooperated with a number of health officers in conducting health week programs. The Y. M. C. A. sought our assistance in training their group leaders in the presentation of the subject of social hygiene to classes of boys, as well as in helping them put over educational campaigns in several of the large cities.

The educational activities of the field staff may be briefly summarized:

Total number of lectures	734
Total attendance	122,520
Total number of men in audiences	32,499
Total number of women in audiences	47,876
Total number of boys over sixteen years	19,408
Total number of girls over sixteen years	20,969
Total number unclassified	1,768

When possible, certain films were used to illustrate the lectures. The following table will show what films were used, the number of times shown and the approximate total attendance. It will be seen that the "End of the Road" was used more frequently than any other film. This is due to the fact that it is more suitable than any of the others for a popular audience. The "Gift of Life," the next most popular film is excellently adapted to audiences of either sex but is less satisfactory before a mixed audience.

	Times Used	Attendance
End of the Road	112	48,307
How Life Begins	11	1,980
Gift of Life	72	12,975
Fit to Fight	1	250
Men's Lecture Film	16	5,116
Animated Diagram	15	2,107
Jinks	7	2,975
Totals	234	73,710

Literature

Less literature was distributed during 1921 than in either of the two previous years. This may be due in part to the fact that no new pamphlets were prepared or published during the year. Requests for specific publications were far more numerous than in any previous year. More than 320,000 pamphlets and over a thousand posters were mailed in response to 5,883 requests. Records of seven interesting cases of syphilis were mailed to approximately 2,600 physicians. During the year a letter containing divisional information has been written weekly to the members of the staff, and at the same time opportunity was taken to call attention to interesting articles in the professional journals and occasionally brief extracts of important articles were attached.

PAMPHLETS DISTRIBUTED

Nos.	First 6 months	Second 6 months	Total
1 — Syphilis, Gonorrhea and Chancroid...	11,462	7,392	18,854
2 — Facts for Parents..................	14,330	14,772	29,102
3 — Facts for Young Men................	16,843	16,545	33,388
4 — Facts for Young Women..............	11,947	13,667	25,614
5 — Facts for Public Officials.............	10,582	11,477	22,059
6 — Keeping Fit	14,404	17,542	31,946
7 — Your Country Needs You............	4,162	....	4,162
8 — A Nation's Call to Young Women.....	660	....	660
9 — Man Power	13,977	10,457	24,434
10 — Mothers of America.................	12,692	7,832	20,524
11 — Facts for the Adult Public...........	17,592	18,377	35,969
12 — A Talk with Mothers................	11,804	7,580	19,384
13 — Passing on the Torch................	12,652	4,827	17,479
14 — Come Girls	12,039	10,792	22,831
15 — Parent's Part	....	325	325
Two Years Fighting V. D. (P. H. S. pamphlet)	2,000	....	2,000
The Social Worker's Approach to the Family of the Syphilitic...........	....	1,200	1,200
	176,388	145,153	321,541

Miscellaneaus

Treatment of Syphilis, Gonorrhea and Chancroid	86	225	311
Laws	85	252	337
Dr. Marsh's Reprint......................	800	1,700	2,500
Cabot Case Histories — 7 to mailing list of 2,600	5	2	7
Miniature "Keeping Fit" exhibit..........	....	106	106
Posters	486	586	1,072
Sex Education in Schools..................	9,242	2,368	11,610

Our efforts toward the education of the public to the fact that syphilis, gonorrhea and chancroid are dangerous communicable diseases which destroy the health and jeopardize the life of the infected and their offspring are meeting with gratifying results.

Only the conservative intellectuals look upon the infected as licentious and they usually have specific reservations. A year ago we took as a measure of progress, the observation that syphilis was an interesting topic for discussion before groups of men or women regardless of what was the immediate occasion of their meeting. Our lecturers were invited to appear on programs of medical societies, meetings of the clergy, of labor organizations, chambers of commerce, women's clubs and parent-teachers' associations. We are now assured by many active physicians and particularly those in charge of the clinics that patients seek advice and treatment for syphilis with almost as little hesitation and embarrassment as they do for any other infectious disease. That our literature is being read in the family is attested by the numerous communications we have from parents, particularly mothers. Recently several institutions of higher education have applied for assistance in giving courses of lectures on social and personal hygiene.

Therapy

Three years ago there were but three venereal disease clinics in the State outside of New York city where syphilis was treated by the intravenous method. Aside from a few dermatologists and urologists, there were practically no physicians who would treat syphilis even with mercury or the iodides. Under these conditions it was exceedingly difficult to secure trained physicians to take charge of the work in the clinics and owing to the aversion shared by all physicians to treating the average patient afflicted with a venereal disease it was difficult to persuade men to undertake to learn the work. They feared both social and professional ostracism. Since then the attitude of the profession has undergone a revolution. Public clinics are now being conducted in 36 cities. The men in charge of them are intensely interested in their work and many of them are devoting their entire time to the treatment of venereal diseases.

The activities in the clinics may be shown in brief by the following tabulations:

	SYPHILIS		GONORRHEA		CHANCROID	
	Male	Female	Male	Female	Male	Female
Number of cases continuing treatment on January 1, 1921	847	609	444	66	20	....
New cases added during 1921	1,719	980	1,751	276	62	1
Cases readmitted during 1921	1,350	821	636	93	24	....
Total	3,916	2,410	2,831	435	106	1
Patients discontinuing treatment:						
With permission	795	487	884	238	61	1
Without permission	1,113	616	1,293	86	32	....

Deducting the discharges from the admissions it will be seen that more than 4,000 patients are on the clinic rolls. A portion of these patients have progressed with their treatment to the point where they are instructed to return at intervals of a few weeks or a month for examination but there are attending regularly for treatment a total of 2,805 patients of the above groups.

Treatment Administered

	Syphilis	Gonorrhea	Chancroid	Non-venereal
Male	40,980	27,564	594	6,523
Female	25,747	9,032	16	980

Number of Specimens taken for Laboratory Study with Result of Examination:

	Blood specimens	Pus smears for gonococci	Dark field examinations
Positive	3,287	2,406	46
Negative	5,847	4,615	32

A certain number of patients are treated at the clinics who have urethritis or other affections of the urinary or genital tracts from which the specific organism cannot be isolated or the etiology definitely determined but which probably are due to a previous specific infection. These cases because of their indefiniteness have been grouped under the head of " non-venereal " cases and receive symptomatic treatment. In some instances continuous study discovers the true nature of the disease and the patients are then correctly classified or discharged from the clinic. During 1920 there were 423 cases of this kind admitted by the clinics and 979 during 1921, an increase of more than 100 per cent. The increase was equally distributed among the males and females.

Not all patients coming to the clinics come for treatment directly but a certain proportion of them come only for information. The consultations vary in character. Sometimes the patient seeks advice about avoiding infection from associates; other times it is to determine whether or not they themselves are infected. Not infrequently persons learning as a result of their consultation that they are infected, secure treatment from their family physician or a specialist.

During 1920 there were 475 patients registered for consultation at the clinics while in 1921 there were 719 patients, an increase of 66 per cent.

During the year there were admitted to the clinic 2,699 patients seeking treatment for syphilis and 2,027 seeking treatment for gonorrhea. At the close of 1921 there were receiving treatment at the clinics more than 2,000 syphilitic patients and over 600 having gonorrhea. More than 100,000 treatments have been given these patients during the year which denotes an increase of approximately 35 per cent over last year. Of these treatments 36,596 were for gonorrhea and 66,727 for syphilis; of the latter, more than 28,000 were intravenous injections of arsphenamine representing an increase of 25 per cent over last year. As an indication of the carefulness with which the clinic work is done, it is gratifying to report that not a single serious reaction, has occurred in all of this intravenous medication.

The arsphenamine manufactured by the laboratory was distributed in ampules of 4 sizes, namely, 1.2, 1.0, 0.6 and 0.4 grams respectively. The distributions by months is shown in the table below.

	1.2 grams	1.C grams	0.6 grams	0.4 grams	Total grams
January	126	499	1,105	857	1,656
February	170	305	1,420	765	1,667
March	486	....	1,262	912	1,705.2
April	700	....	1,156	1,108	1,976.8
May	759	....	1,608	1,033	2,288.8
June	452	....	672	749	1,245.2
July	151	....	551	825	841.8
August	150	....	396	386	572.0
September	50	....	176	203	246.8
October	25	....	250	224	269.6
November	....	....	286	178	242.8
December	110	....	224	176	336.8
	3,179	804	9,106	7,416	13,048.8
Reduced to grams	3,814.8	804	5,463.6	2,966.4	13,048.8

The marked decrease in distribution since July 1st is due to the legislative instruction to discontinue supplying the prisons and state hospitals.

But a few years ago the syphilitic seeking treatment was welcomed only by the quack, all other offices being closed to him, but today the physician in his private practice has grown more liberal toward the treatment of syphilis. Following the lead of the clinics and responding to the demand created by our educational work among the laity, the practicing physicians are taking greater pains to diagnose syphilis and when necessary are undertaking its treatment according to the modern methods. This is indicated by an increase in the number of specimens submitted to the laboratories for examination. From all the laboratories in the State there were reported during the latter six months of 1918 a total of 807 positive examinations for syphilis and 115 for gonorrhea while during the year of 1921 there were reported 9,752 positive examinations for syphilis and 3,887 for gonorrhea. During this same year the state laboratory alone examined, for physicians, by the complement fixation method more than 50,000 specimens of blood and over 800 specimens of spinal fluid. Calculating from the reports of cases received during the last three years and that at least two and one-half years are required to accomplish a cure of the average case of syphilis, there must be according to our incomplete records, approximately 30,000 persons receiving treatment in the State, exclusive of New York city, where there must be at least 40,000 more.

Analysis of Notifications

Interesting facts may be learned by briefly studying the records accompanying the notifications of cases observed by the physicians in private practice. Several tabulations have been prepared and are set down below.

I. Distribution of cases according to sex of patient.

	Syphilis	*Gonorrhea*
Male	6,214	2,915
Female	3,538	968
Total	9,752	3,883

The totals will vary because all reports were not complete and the tabulations have been made as complete as possible, and to some of the tables have been added records from cases treated at the clinics.

II. Distribution of cases according to sex and color.

	SYPHILIS			GONORRHEA		
	Male	Female	Total	Male	Female	Total
White	5,843	3,311	9,154	2,915	968	3,883
Black	371	227	598	91	27	118
Total	6,214	3,538	9,752	3,006	995	3,901

III. Distribution of cases according to disease and age of patient at time of submission of first specimen.

	SYPHILIS		GONORRHEA	
	Number	Percentage	Number	Percentage
Under one year	56	0.58	37	0.94
1–9	154	1.60	179	4.55
10–14	162	1.70	58	1.47
15–19	467	4.90	548	13.82
20–24	1,561	16.40	1,222	31.18
25–29	1,634	17.10	920	23.40
30–34	1,446	15.12	487	12.40
35–39	1,322	13.80	249	6.35
40–44	1,622	17.00	118	3.00
45–49			54	1.37
50 plus	1,126	11.80	60	1.52
Total	9,550	100.00	3,932	100.00
Not stated	202		67	
Total	9,752		3,999	

IV. Distribution according to sex, marital condition and disease.

	SYPHILIS		GONORRHEA	
	Male	Female	Male	Female
Single	2,797	881	1,846	517
Married	2,930	2,337	796	367
Widowed	201	216	33	19
Divorced	16	31	5	3

V. Distribution according to residence of patient.

	SYPHILIS		GONORRHEA	
	Male	Female	Male	Female
Urban	4,768	2,762	2,404	759
Rural	1,419	758	508	209
Out of State	27	18	3	....

Since the population is about evenly divided between the rural and urban districts it is necessary to explain that laboratory and clinical facilities being much more accessible in the vicinity of cities may account in a measure for the apparent difference of distribution. It is interesting to note that the ratio between the sexes seems not to have been affected by residence. Of those infected with syphilis 23 per cent of the males and 21.5 per cent of the females came from the rural districts while of those infected with gonorrhea 17.5 per cent of the males and 21.5 per cent of the females were outside of the cities.

VI. Distribution of cases according to stage of the disease.

	SYPHILIS		GONORRHEA	
	Male	Female	Male	Female
Acute	1,395	644	1,685	395
Chronic	2,605	1,273	287	89

The stage of the disease when the first specimen is submitted varies considerably according to the disease. Of the cases of syphilis 34 per cent are acute while 85 per cent of the gonorrhea cases are acute. In 1920 the number of acute cases of syphilis was 2 per cent greater than this year regardless of the fact that the number of cases reported in the two years is about the same. Sex has no influence on this table; practically the same proportion of acute cases came from each sex.

In 3,877 of the cases of syphilis or about 40 per cent of all reported, the period of time elapsing between the exposure to infection and the submission of the first specimen was stated. It will be seen from the table below that about 60 per cent of the syphilis cases did not seek medical attention within the first year after the inoculation. Twelve per cent sought advice between the 5th and 9th year after infection, 21 per cent ten or more years later, while 7 per cent waited more than twenty years.

VII. *Showing the interval between the date of infection or detection of initial sore and the time of submitting the first specimen from cases of syphilis.*

	NUMBER OF CASES	PER CENT
Less than 1 year	1,570	40.55
More than 1 but less than 2 years	380	9.80
More than 2 but less than 3 years	314	8.10
More than 3 but less than 4 years	200	5.20
More than 4 but less than 5 years	130	3.40
Between 5 and 9 years, inclusive	471	12.00
Between 10 and 14 years, inclusive	350	9.00
Between 15 and 19 years, inclusive	185	4.80
Between 20 and 29 years, inclusive	228	5.90
Between 30 and 39 years, inclusive	37	0.95
40 plus	12	0.30
Total	3,877	100.00

Distribution of Arsphenamine

For the most effective treatment of syphilis certain forms of mercury and arsenic are necessary. The mercury preparations are comparatively inexpensive and readily obtainable by the average physician or institution, but the arsenic preparations on the other hand are very expensive (although it is claimed they can be manufactured for much less than they cost on the market) and satisfactory products are produced by only a few manufacturers. It is not safe to use any preparation that has not been examined and approved by the United States Public Health Service Laboratory. The State laboratory for a time manufactured arsphenamine which was approved by the service as a very superior product. During the last three years we have distributed among the clinics, prisons, reformatories, orphanages and State hospitals more than 33,000 grams of arsphenamine to be used in treating indigents or their inmates who are wards of the State.

The benefit to the State from the careful use of this drug is so great that any attempt to estimate it would be in vain. Those treated are but a fraction of those who are in need of treatment but who will never get it because of their inability to spare the cost. In the meantime their disease will progress with the probability of eventually making them wards of the State or a charge upon their communities, and most likely; before that stage is reached, they will have been instrumental in bringing into the world some infected offspring who will be doomed to an early death or to a life of misery. The number of requests for treatment by those who have learned that they are infected but are not near to a clinic and cannot afford to pay a physician for their treatment is increasing. Not a few times the infected are heads of families and are aware of the menace they are to their wives and children. There should be at our disposal a supply of arsphenamine from which we could supply a local physician the amount required to treat such cases.

Hospital Survey

A questionnaire was sent to the hospitals in the State in 1916 by Wood, making inquiry concerning their desire to admit or treat syphilitic patients and it was found that about 45 per cent were willing to admit cases. During the past year a similar questionnaire was submitted by this division and responses were received from 212 hospitals in which 146 or 69 per cent signify a willingness to treat chronic cases of syphilis, while 84 or 40 per cent will admit acute cases. The number willing to take cases of gonorrhea is not quite so great, 67 per cent will admit chronic cases and 32 per cent will admit acute cases. Of those hospitals conducting out-patient dispensaries, 56 per cent will treat cases of syphilis and 51 per cent cases of gonorrhea in their dispensaries. This data indicates that hospitals have during the last 5 years increased their facilities for the care of the venereal patient by more than 50 per cent. The presence of syphilis in a patient is often not suspected until a test of the blood reveals it. Realizing this many clinicians have adopted the practice of making a test of every patient's blood as a matter of routine. Inquiry was made of the hospitals to ascertain how many had adopted a similar practice. A summary of the hospital survey follows:

	Up-State	New York City	Total
Number of hospitals	147	64	211
Total beds	11,622	21,632	33,254
Free beds	8,325	18,806	27,131
Private beds	3,297	2,826	6,123
Venereal clinic	12 (8%)	27 (42%)	39 (18%)
Acute syphilis	65 (44%)	18 (28%)	83 (39%)
Chronic syphilis	113 (77%)	32 (50%)	145 (69%)
Acute gonorrhea	47 (32%)	19 (30%)	66 (31%)
Chronic gonorrhea	113 (77%)	27 (42%)	140 (66%)
Have maternity ward	103 (70%)	41 (64%)	144 (68%)
Admit venereal obstetrical cases	72 (49%)	12 (19%)	84 (40%)
Proportion of hospitals having maternity wards and performing Wassermann tests on maternity patients	(70%)	(29%)	(58%)
Making routine Wassermann:			
On free patients	24 (16%)	29 (45%)	53 (25%)
On medical cases	24 (16%)	27 (42%)	51 (24%)
On surgical cases	22 (15%)	25 (39%)	47 (22%)
On obstetrical cases	28 (19%)	23 (36%)	51 (24%)

Medical Follow-up

A medical follow-up program is being developed at the various clinics. Its aim is to keep the patients interested in their treatment but also includes inspection of family contacts with complete medical examination where indicated and feasible. The importance of the first named object is appreciated by all engaged in the work. It is a very difficult task at times to persuade a man or woman that they are not cured when the initial syphilitic sore is healed but that treatment must be continued until other more elaborate tests give no evidence of the persistence of the disease. Many persons who have thus unadvisedly discontinued their treatment have later in life suffered recurrences of the disease. During the intermission from treatment, which may be

10 or 15 years, the disease has been insidiously developing in the deeper tissues without the patient realizing any change. Such persons often suffer a nervous collapse. A demonstration of this characteristic of the disease was recorded within the last year in a locomotive engineer employed on one of the large railroads of the State. He was apparently in the best of health but ran by a signal set against him and could give no satisfactory explanation for his action. A careful medical examination was made of him including a test of his blood. Nothing definite was found except a positive reaction to the complement-fixation test. He was relieved of his highly responsible position but retained as an employee. Within six months however his disease had totally incapacitated him and in another two months he died in a state hospital.

That many cases of unsuspected syphilis may lurk among the family contacts of the infected was demonstrated by the work in which this division had a part which was reported by one of the state hospitals about a year ago. Among the family contacts of 75 syphilitic insane 50 other cases of syphilis were established. Further proof of the significance of this report was shown by investigations undertaken by this Division of the families of two groups of children. The first group had congenital syphilis as indicated by the reaction of their blood and the histories collected. Blood specimens from their family contacts reacted positively to the complement fixation test, indicating the presence of syphilis, in 82 per cent of the examined. From the second group of 263 children whose blood reactions were neither frankly positive nor definitely negative, 173 relatives were examined and 13 per cent of them found to have syphilis. In this group 24 per cent of the mothers and 14 per cent of the fathers examined were found infected.

The physicians in charge of the clinics report similar findings in the follow-up work of their patients. Examination of family contacts is perhaps one of the most important undertakings of the year.

Ophthalmia Neonatorum

If a woman who has had gonorrhea becomes a mother it sometimes happens that the child is inoculated with the germs as it is being born. The seat of infection is usually in the infant's eyes. They become acutely inflamed and overflow with a purulent discharge. Unless they are immediately and scientifically treated blindness will result. Figures prepared by the New York State Commission for the Blind show that 24 per cent of the blind in the State are so because of opthalmia neonatorum. The gonococcus is not the only germ that causes sore eyes in the infant but it is by far the most dangerous. Opportunity was had to investigate a certain number of cases of opthalmia neonatorum during the year and it was found where laboratory examination had been made to determine the cause that 11 out of 12 cases or 92 per cent were due to the gonococcus. Prospective mothers must be warned of this danger and physicians should be requested to instil a prophylactic into the eyes of every child at birth as a matter of routine because the prophylactic can do no harm and may destroy germs where their presence is not even suspected.

In summarizing the report for the year the following observations would be marked:

1. Extension of educational work to the rural districts.
2. Great increase in number of physicians treating venereal diseases.
3. Marked increase in the activities of the clinics.
4. Developing need for free distribution of arsphenamine.
5. Gratifying increase in the number of hospitals willing to admit venereal disease patients.
6. Striving for prolonged treatment.
7. Significance of medical and serological examination of family contacts of all patients.
8. Prophylactic measures to prevent opthalmia neonatorum.

DIVISION OF COMMUNICABLE DISEASES

DIVISION OF COMMUNICABLE DISEASES

HERMANN M. BIGGS, M.D., *Commissioner of Health, Albany, N. Y.:*

SIR.— I have the honor to submit the attached report of the Division of Communicable Diseases for the year 1921.

Respectfully,

EDWARD S. GODFREY,
Director.

March 17, 1922.

The year 1921 was chiefly remarkable from the standpoint of communicable diseases, for the extensive prevalence of poliomyelitis during the summer and fall, more cases having been reported in 1921 than in any year of record except 1912 and 1916. The total cases reported for the State exclusive of New York City was 565 of which 464 were reported in the months of August, September and October. This unusual prevalence began to be noted in the latter part of July and a warning was issued at that time.

The epidemic centered in the city of Utica, Oneida county, from which 88 cases were reported. The rest of Oneida county reported 75 cases and 37 cases occurred in Herkimer county within 30 miles of Utica — most of them within half that distance — so that approximately 35 per cent of all the cases in the State were reported from this area. Contact was established with a fair degree of certainty in some of the rural outbreaks but in the vast majority no data was obtainable tending to establish the mode of transmission. A number of cases occurring outside of Utica gave a history of having been in Utica or of having been in contact with people who had come from Utica within the incubation period. The number of these and the significance to be attached to the statements require further study of the detailed histories which have been obtained.

Eighteen cases were reported from Syracuse during the latter half of September and the month of October. But one case has been reported from Syracuse during the year until this small but sharp outbreak occurred. The State fair had been held the week before the outbreak began. Ten cases were reported from the town of Hempstead, Long Island, in August, September and October, the greatest number in any one municipality other than Buffalo and those places already mentioned. In all, 255 towns, villages and cities reported one or more cases as against 49 municipalities reporting cases in 1920. The age and sex distribution of the cases were as follows:

Age Periods	Total	Male	Female
Under 1 year	24	14	10
1 year	65	32	33
2 years	60	32	18
3 years	37	20	17
4 years	53	25	28
Total under 5 years	239	123	116
5 years — 9	131	75	56
10 years — 14	80	49	31
15 years — 19	46	30	16
20 years — 24	31	18	13
25 years — 29	10	3	7
30 years and over	24	19	5
No age stated	4	3	1
Total	565	320	245

There was a marked increase in the number of typhoid cases as compared with the last two years — 2,150 as against 1,725 in 1920. The counties with the highest morbidity rates were St. Lawrence, Chemung and Seneca. The rates of the first two named were due to well defined outbreaks, that of Seneca county to an unusual number of so-called sporadic cases, an aftermath possibly, of the 1920 outbreak in Seneca Falls. Putnam county reported no cases during the year.

There were sixteen outbreaks of ten or more cases and nineteen less extensive ones. Outbreaks of special interest were those in Baldwinsville, Onondaga county, twenty-one cases, March and April, due to milk infection traced to a carrier on a dairy farm; Syracuse, between ninety and one hundred cases, August and September, infection transmitted through milk traced to an incipient typhoid case supplying milk to a Syracuse dealer; Elmira, thirty-three cases, October, transmitted through milk traced to "walking" case on dairy farm; Gouverneur, between eighty and ninety cases during September and October, transmitted through well water, infection probably from a privy on the premises or through a sudden rise in a grossly polluted creek which overflowed its bank so that the stream flowed alongside the well; Beacon, outbreak in May and June, another in the same city in November transmitted through milk supply infected by a carrier. This carrier was discovered at the time of the spring outbreak and was permitted to live on the farm with the understanding that he would not engage in any way in handling the milk. Being short of labor in the fall he commenced milking and the second outbreak followed. The sale of his milk has been prohibited.

In none of the milk borne outbreaks above mentioned, nor indeed in any that have been reported to the Department this year was the milk pasteurized.

In order to determine the frequency in which pasteurized milk has been responsible for outbreaks of communicable diseases the Division circularized health authorities throughout the United States in an effort to learn of such outbreaks. The result of this inquiry is to be embodied in an article for publication.

The seasonal prevalence of this year's typhoid was somewhat remarkable since although the number of cases for the first quarter was the highest in four years, the number for the succeeding four months were almost as much lower. August was the lowest on record, except in 1920, its excess over that year being due solely to the Syracuse outbreak. September was the lowest on record, but in October the number exceeded that for any October since 1913 and November and December were the highest in five years. With the exception of the extensive outbreaks in Gouverneur and Elmira these cases occurred either sporadically or as small outbeaks of from five to fifteen cases. The number of foci was much greater than for the preceding year during these months, the increase in rural foci being particularly marked. For the year, however, typhoid was reported from only fifty-nine more districts than in 1920 — 495 in 1921 and 436 in 1920.

It is believed that the factor principally responsible for the morbidity increase was the abnormally dry weather that prevailed in many sections of the State. This resulted in many usual sources of water supply (wells, ponds or streams) becoming inadequate with a consequent resort to doubtful sources. So far as public water supplies were concerned the activities of the division of sanitation unquestionably prevented a very much higher incidence than we have had. But there was no such careful supervision over the wells resorted to by individuals and it seems probable that many cases owed their infection directly or indirectly to wells. The typhoid increase for 1921 was by no means confined to New York State. According to the Bulletin of the Metropolitan Life Insurance Company a marked increase was noted in the States of New Jersey, Illinois, Pennsylvania, Ohio, New York, North Carolina, Maryland, Georgia, Indiana, Alabama, Kentucky and Kansas. A number of explanations have been presented for this increase but none seem as plausible as that given above.

Six outbreaks of diarrhea came to the attention of the Department during the year although scores of them undoubtedly occurred. As has usually happened the outbreaks had subsided by the time they were reported. In two outbreaks, however, fecal and blood specimens were obtained from some of the later cases and fairly good epidemiological data secured. In both, the source of the trouble was quite clearly the drinking water supplied to the patrons of summer resorts.

The Department is very anxious to pursue such investigations further and to that end the Public Health Council has made such outbreaks reportable by health officers. Success will depend largely on the vigilance of the health officers in discovering outbreaks early and on their promptness in reporting them to the department.

Early in the year our attention was called to the prevalence of epidemic of hiccough in Chenango county. An epidemiologist of the Department found upon his arrival that the epidemic had subsided some two weeks previously, but from descriptions of the cases by local physicians he was led to believe that it was epidemic jaundice which had been prevailing. The symptomatology as given in the report of the epidemiologist corresponded quite closely with that of *spirochetosis ictero-hemorrhagiac* as described by Inada, Stokes, Ryle et al, except in its severity. No deaths had occurred in approximately one hundred and twenty cases, and the febrile stage was neither so marked nor so prolonged. The sanitary supervisors were at once informed of this outbreak and of the laboratory specimens which should be submitted from cases in the event an outbreak should come to their notice.

No further outbreaks were reported until the middle of December, when two of the sanitary supervisors simultaneously reported outbreaks in their respective districts. These were followed shortly by reports from a third sanitary supervisor and upon the matter coming to the attention of the Commissioner he directed that a thorough investigation should be undertaken. This investigation was under way at the close of the year. Every physician in the State has been circularized requesting him to report to the Department immediately cases occurring in his practice and it is hoped that material may be thus obtained which will result in establishing the identity of the disease and the method for its control.

Special Investigations

Other unusual investigations were one of apparent ice cream poisoning in Suffolk county which attacked 36 out of 40 boys in camp there and an investigation of suspected food infection in Port Washington. No definite laboratory findings were obtained in either instance.

Only two scarlet fever epidemics are worthy of special mention. One occurred in Wellsville, Allegany county from which place 37 cases were reported during the month of February. The outbreak was referred to Dr. J. J. Mahoney, sanitary supervisor, and with the assistance of one of the State nurses was quickly brought under control. The other was in the village of Ossining early in October, when approximately twenty cases suddenly developed on one milk route. The cases were widely scattered and it was impossible to account for this sudden increase on any other hypothesis than that of milk borne infection.

During the holding of children's consultation clinics in Schoharie county in 1920 an unusual number of goitre cases were discovered. Investigation later disclosed that it was endemic in one section of the county. Efforts were thereupon made to uncover other foci, one result of which was the discovery that numerous cases of goitre existed in a circumscribed area in Rockland county and that the disease was very prevalent throughout Cortland county. Surveys were begun in these counties and an epidemiologist was assigned to investigate; the work, however, was interrupted by the outbreak of poliomyelitis, necessitating his services elsewhere. A nurse was assigned to continue the investigation. The data so far received has not yet been collated.

Smallpox

Smallpox was reported from 99 foci in the State during 1921 as against 65 for the preceding year. The total was 602 as compared with 281 for 1920. The disease was quite prevalent during the first half of the year, 86 per cent of the cases occurring during the first six months. Forty-seven cases were reported from St. Lawrence county and 54 from Carthage, Copenhagen and the surrounding rural districts. Sixty-nine cases occurred in the town of Georgetown, Madison county, in May and June and 82 in Geneva and the adjacent town and village of Phelps. Moravia and the adjacent rural districts reported 28 cases, Seneca Falls and vicinity reported 34 and 33 cases were notified from Cambridge, Washington county, Hoosick Falls, Rensselaer county and their environs. The largest outbreak of the year occurred in the adjoining cities of Tonawanda and North Tonawanda, 37 cases in the former, 64 in the latter.

The story of these outbreaks is a rather monotonous reiteration of mild cases, undiagnosed or unseen by a physician, coming in contact with many people in unvaccinated communities, smouldering for weeks or perhaps months until some case of moderate severity resulted in a correct diagnosis. Only then would the search for missed cases and contacts begin, isolation and vaccination be instituted and the disease brought under control. It will be noticed that all of the outbreaks occurred in small cities, villages or rural towns, none of which are vaccinated unless it should be as a result of a smallpox outbreak. In the nine first and second-class cities of the State, where vaccination is a prerequisite to school attendance, no outbreaks occurred and the disease rate for the year was only one-thirteenth of that elsewhere in the State, exclusive of New York City. The vaccination histories of these cases is given in the following table:

	Number	Per Cent
Total	602	....
Vaccinated within 7 years	21	3.5
Vaccinated more than 7 years previously	35	5.8
Never successfully vaccinated	466	77.4
History not obtained	80	13.3

There were 19,765 vaccinations reported to the Department during the year of which 15,599 were successful and 1,486 unsuccessful. Thirty per cent of these were reported from second-class cities.

The disease rates for scarlet fever, diphtheria and whooping cough were all higher than they have been for many years. The highest diphtheria case rate is to be found in Onondaga county, due principally to the extensive prevalence of the disease in Syracuse, although other nearby towns and villages, especially Solvay, also suffered heavily. Major outbreaks were noted and investigated in Auburn and Ithaca. The epidemic which had prevailed in Buffalo for almost three years declined during the spring and summer and failed to return to its former proportions in the late months of the year.

Sanitary Supervisors

The work of the sanitary supervisors during the year was a further demonstration of the interest and enthusiasm that has come to be characteristic of their work. Despite the fact that one of their number was incapacitated for nearly three months by reason of illness, the total number of hours devoted by them to their work was only 116 less than in 1920, being 33,857 as against 34,873. The hours in travel exceeded that of 1920 by 736, 9,970 as against 9,234. They made 661 visits on account of communicable diseases and over 100 outbreaks were investigated. They had 641 interviews with public health nurses; conferred with 307 town and village boards; held 1,080 miscellaneous conferences, the latter including district conferences with health officers in all the sanitary supervisor districts, except two; attended 92 medical society meetings, 172 meetings of other organizations; gave 322 addresses; investigated 112 complaints and effected 19 consolidations of local health districts. Two consolidations were discontinued, one by an act of the legislature and the other upon the petition of the local authorities.

The most pronounced increase in any class of work over the preceding year was the attendance at clinics, 409 as against 242. Children's consultations under the auspices of the Division of Child Hygiene were held in eight of the sanitary supervisors' districts. The supervisors gave assistance in examining at these clinics, not only in their own districts, but in those of other sanitary supervisors, assignments being made from this Division. Besides the above, children's clinics were held under local auspices in several of the supervisors' districts, the sanitary supervisor arranging for the clinics and usually assisting in the examinations.

Primary district reports were received from 1,147 of the 1,326 local primary districts in the State. These reports are being tabulated and will serve as a basis upon which progress may be measured.

All but eight of the new health officers appointed during the year were visited by the sanitary supervisors. The eight unvisited were all appointed during the closing months of 1921.

There were 640 telephone conferences held besides 393 miscellaneous duties performed, which are not classifiable under the above headings.

Post-graduate courses under the direction of the sanitary supervisors were conducted in connection with the Albany Medical College, Cornell University at Ithaca and Syracuse University. Forty-three students enrolled in the classes.

Table I

IMPORTANT COMMUNICABLE DISEASES IN NEW YORK STATE, UP-STATE AND NEW YORK CITY BY YEARS, GIVING CASES, DEATHS AND RATES

(Case and death rates per 100,000 population; fatality, per cent of deaths to cases)

	New York State					Up-State					New York City				
	Cases	Deaths	Case rate	Death rate	Case fatality rate	Cases	Deaths	Case rate	Death rate	Case fatality rate	Cases	Deaths	Case rate	Death rate	Case fatality rate
TYPHOID FEVER															
1908	6,976	1,375	79	15.7	19.7	3,811	837	91	19.7	22.0	3,165	538	70	11.9	16.69
1909	7,897	1,315	88	14.7	16.7	4,284	751	100	17.4	17.5	3,613	564	78	12.1	15.61
1910	8,536	1,374	93	15.0	16.1	4,801	816	110	18.7	17.0	3,735	558	78	11.6	14.93
1911	8,083	1,316	86	14.1	16.3	4,426	771	100	17.5	17.4	3,657	545	74	11.1	14.90
1912	6,418	1,128	67	11.8	17.6	3,343	629	75	14.1	18.8	3,076	499	61	9.9	16.22
1913	6,248	1,018	64	10.5	16.3	3,605	656	80	14.5	18.2	2,643	362	51	7.0	13.69
1914	5,481	878	55	8.9	16.0	3,221	544	70	11.9	16.8	2,260	334	42	6.3	14.77
1915	5,484	775	54	7.7	14.1	3,028	442	65	9.5	14.6	2,456	333	45	6.1	13.55
1916	4,417	603	43	5.8	13.7	2,788	388	59	8.8	13.9	1,629	215	29	3.8	13.19
1917	4,293	588	41	5.6	13.7	2,851	361	60	7.6	12.7	1,442	229	25	3.9	15.88
1918	3,391	576	32	5.4	17.0	2,153	380	45	7.9	17.7	1,238	196	21	3.3	15.83
1919	2,551	364	23	3.3	14.3	1,697	243	35	4.9	14.3	854	121	14	2.0	14.17
1920	2,694	363	26	3.5	13.5	1,725	225	36	4.7	13.0	969	138	17	2.4	14.24
1921	3,049	378	29	3.6	12.4	2,150	254	45	5.3	11.8	899	124	16	2.2	13.8
DIPHTHERIA															
1908	20,759	2,473	236	28.2	11.9	4,390	710	104	16.7	16.2	16,369	1,763	362	38.9	10.77
1909	20,665	2,313	230	25.8	11.2	4,613	598	107	13.9	12.4	16,052	1,715	344	36.8	10.68
1910	22,630	2,433	247	26.6	10.8	5,404	718	124	16.5	13.3	17,226	1,715	359	35.8	9.96
1911	20,007	1,963	214	21.0	9.8	6,523	679	148	15.4	10.4	13,484	1,284	273	26.0	9.52
1912	18,927	1,624	198	17.0	8.6	5,394	498	121	11.4	9.2	13,533	1,126	267	22.2	8.32
1913	20,247	1,853	208	19.1	9.2	5,662	519	125	11.5	9.2	14,585	1,334	277	27.7	9.14
1914	22,537	2,015	227	20.3	8.9	5,408	523	118	11.4	9.7	17,129	1,492	321	28.0	8.71
1915	20,806	1,770	206	17.5	8.5	5,527	492	119	10.6	8.7	15,279	1,278	279	23.4	8.36
1916	19,133	1,524	186	14.8	8.0	5,612	493	119	10.5	8.8	13,521	1,034	241	18.4	7.64
1917	19,183	1,745	183	16.6	9.1	6,559	589	138	12.4	9.0	12,624	1,156	220	20.1	9.16
1918	14,533	1,772	136	16.6	12.2	5,079	527	105	10.9	10.3	9,454	1,245	161	21.2	13.17
1919	25,077	2,053	230	18.9	8.2	11,063	813	227	16.7	7.3	14,014	1,240	233	20.6	8.85
1920	24,808	1,905	237	18.2	7.7	10,642	860	222	18.0	8.1	14,166	1,045	250	18.4	7.38
1921	27,029	1,701	255	16.1	6.3	11,919	809	247	16.8	6.8	15,110	892	263	15.5	5.9

Table I

IMPORTANT COMMUNICABLE DISEASES IN NEW YORK STATE, UP-STATE AND NEW YORK CITY BY YEARS, GIVING CASES, DEATHS, AND RATES — (*Concluded*)

(Case and death rates per 100,000 population: fatality, per cent of deaths to cases)

	NEW YORK STATE					UP-STATE					NEW YORK CITY				
	Cases	Deaths	Case rate	Death rate	Case fatality rate	Cases	Deaths	Case rate	Death rate	Case fatality rate	Cases	Deaths	Case rate	Death rate	Case fatality rate
SCARLET FEVER															
1908	30,403	1,668	346	19.2	5.5	7,467	341	176	8.5	4.6	22,936	1,327	507	29.3	5.8
1909	22,747	1,204	254	13.4	5.3	9,743	517	226	9.7	5.3	13,004	787	279	16.9	6.1
1910	31,504	1,616	344	17.7	5.1	12,220	664	280	15.3	5.4	19,284	952	402	19.9	4.9
1911	25,830	1,149	276	12.3	4.4	10,037	408	227	9.2	4.1	15,793	741	320	15.	4.7
1912	18,579	789	195	8.3	4.2	5,863	174	131	3.9	3.0	12,716	615	251	12.1	4.8
1913	17,263	837	177	8.6	4.8	6,524	330	144	7.3	5.1	10,739	507	206	9.8	4.7
1914	18,596	687	187	6.9	3.7	7,491	235	163	5.1	3.1	11,105	452	208	8.5	4.1
1915	15,802	409	156	4.1	2.6	5,923	118	128	2.7	2.0	9,879	291	181	5.3	2.9
1916	11,083	178	108	1.7	1.6	5,268	82	112	1.7	1.6	5,815	96	104	1.7	1.7
1917	15,234	261	145	2.5	1.7	9,174	139	193	2.9	1.5	6.060	122	105	2.1	2.0
1918	10,098	300	95	2.8	3.0	5,638	122	117	2.5	2.2	4,460	178	76	3.0	4.0
1919	12,075	270	111	2.5	2.2	7,481	134	153	2.7	1.8	4,594	136	76	2.3	3.0
1920	15,186	445	145	4.3	2.9	8,649	225	181	4.7	2.6	6,537	220	115	3.9	3.4
1921	25,663	668	243	6.3	2.6	12,147	283	251	5.9	2.3	13,516	385	235	6.7	2.9
WHOOPING COUGH															
1908	....	503	....	5.7	....	....	318	....	7.5	....	....	185	....	4.1	....
1909	....	783	....	8.7	....	....	382	....	8.9	....	....	401	....	8.6	....
1910	....	727	....	7.9	....	....	433	....	9.9	....	....	294	....	6.1	....
1911	8,362	819	89	8.8	9.8	5,116	436	116	9.9	8.5	3,246	383	66	7.8	11.8
1912	7,821	683	82	7.2	8.7	5,638	392	126	8.8	6.9	2,183	291	43	5.7	13.3
1913	9,018	822	93	8.5	9.1	5,520	402	122	8.9	7.2	3,498	420	67	8.1	12.0
1914	11,651	730	117	7.4	6.3	7,853	451	171	9.8	5.7	3,798	279	71	5.2	7.3
1915	13,338	759	132	7.5	5.7	6,567	363	141	7.8	5.5	6,771	396	124	7.2	5.8
1916	17,297	745	168	7.2	4.3	9,837	393	209	8.4	4.0	7,460	362	133	6.3	4.7
1917	18,355	886	175	8.4	4.8	12,758	401	268	8.4	3.1	5,597	485	97	8.4	8.7
1918	16,522	1,237	155	11.6	7.5	10,964	572	227	11.8	5.2	5,558	665	94	11.3	12.0
1919	7,283	293	67	2.7	4.0	5,615	132	115	2.7	2.4	1,668	161	28	2.7	9.7
1920	21,224	1,004	203	9.6	4.7	13,694	389	286	8.1	2.8	7,530	615	133	10.9	8.2
1921	20,877	755	197	7.1	3.6	15,069	405	312	8.4	2.7	5,808	350	101	6.1	6.0

TUBERCULOSIS (all forms)															
1908	36,330	16,550	299	188.5	63.1	3,310	6,379	78	150.0	192.7	22,920	10,171	506	224.7	44.4
1909	32,915	16,117	367	179.8	49.0	6,937	6,158	161	143.3	88.9	25,979	9,949	557	213.5	38.3
1910	37,963	16,337	415	178.5	43.0	5,957	6,263	137	143.7	105.1	32,006	10,074	667	210.1	31.5
1911	33,399	16,548	356	177.1	49.7	8,796	6,299	199	142.7	71.6	24,513	10,249	497	207.9	41.8
1912	30,539	15,989	320	167.7	52.4	7,777	6,011	174	134.5	77.3	22,752	9,978	449	197.0	43.9
1913	31,123	16,152	320	166.1	51.9	8,449	6,129	187	135.4	72.5	22,674	10,023	436	192.8	44.2
1914	31,128	16,550	314	167.0	53.2	9,472	6,270	207	136.8	66.2	21,602	10,289	405	192.9	47.6
1915	33,736	16,445	335	162.7	48.7	11,595	6,195	250	133.5	53.4	22,141	10,550	405	187.4	46.3
1916	32,059	15,830	311	153.6	49.3	12,767	6,178	272	131.5	48.4	19,292	9,642	344	172.1	50.0
1917	28,686	16,556	278	157.8	57.7	11,272	6,417	237	135.0	56.9	17,414	10,139	303	176.4	58.2
1918	24,464	16,953	229	158.7	69.2	10,125	6,855	210	142.5	67.7	14,339	10.098	244	171.7	70.4
1919	25,482	14,352	234	131.9	56.3	10,912	5,855	224	120.0	53.7	14,570	8,497	242	141.1	58.3
1920	23,796	12,475	228	119.4	52.4	9,761	5,338	204	111.5	54.7	14,035	7,137	248	125.9	50.9
1921	22,521	10,719	213	101.3	47.6	9,066	4,801	188	99.4	53.0	13.455	5,918	234	102.9	44.0
MEASLES															
1908	58,738	1,175	669	13.4	2.0	20,265	203	476	4.8	1.0	38,473	972	850	21.5	2.5
1909	52,863	1,272	590	14.2	2.4	21,072	276	489	6.4	1.3	31,791	996	682	21.4	3.1
1910	69,878	1,285	763	14.0	1.8	34,062	511	782	11.7	1.5	35,816	774	747	16.1	2.2
1911	48,675	977	521	10.5	2.0	22,792	319	516	7.2	1.4	25,883	658	525	13.3	2.5
1912	65,060	1,050	682	11.0	1.6	26,042	377	582	8.4	1.5	39,018	673	770	13.3	1.7
1913	65,874	1,072	672	11.0	1.6	36,024	444	796	9.8	1.2	29,850	628	564	12.1	2.1
1914	47,883	839	483	8.5	1.8	22,090	280	482	6.1	1.3	25,793	559	484	10.5	2.2
1915	62,660	844	620	8.3	1.3	24,474	214	527	4.6	.9	38,186	630	698	11.5	1.6
1916	67,110	928	651	9.0	1.4	45,507	439	969	9.3	1.0	21,608	489	386	8.7	2.3
1917	60,860	892	580	8.5	1.5	33,341	335	701	7.0	1.0	27,519	557	479	9.7	2.0
1918	74,869	1,293	701	12.1	1.7	46,194	504	961	10.4	1.1	28,675	789	487	13.4	2.8
1919	19,882	354	183	3.3	1.8	11,688	136	240	2.8	1.2	8,194	218	136	3.6	2.7
1920	78,481	1,098	751	10.5	1.4	48,398	362	907	7.6	.8	35,083	736	619	12.9	2.1
1921	38,743	409	366	3.9	1.1	31,005	244	642	5.1	.8	7,788	165	135	2.9	2.1

Table 2

IMPORTANT COMMUNICABLE DISEASES REPORTED BY MONTHS FOR NEW YORK STATE, NEW YORK CITY AND REST OF STATE, 1908–1921

TYPHOID FEVER

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
						NEW YORK STATE							
1908	434	418	357	285	312	412	517	956	1,197	923	586	579	6,976
1909	515	341	389	258	361	336	474	851	1,880	1,120	867	505	7,897
1910	456	566	457	322	374	356	486	1,203	1,457	1,293	989	577	8,536
1911	420	521	449	346	364	412	641	1,407	1,168	893	792	670	8,083
1912	483	316	336	434	414	289	521	1,007	982	836	413	387	6,418
1913	257	221	189	404	348	222	417	620	1,338	1,177	608	447	6,248
1914	303	238	290	356	340	325	416	694	989	776	421	333	5,481
1915	287	241	249	185	199	277	429	931	867	832	493	494	5,484
1916	206	211	166	265	273	309	380	651	795	530	349	282	4,417
1917	257	308	255	211	225	227	325	558	867	541	307	212	4,293
1918	120	125	170	193	194	257	314	545	597	487	205	814	3,391
1919	124	89	77	81	101	136	236	391	563	408	220	125	2,551
1920	118	50	75	206	103	154	178	391	579	381	270	189	2,694
1921	168	125	150	129	121	124	202	439	598	517	301	175	3,049
						NEW YORK CITY							
1908	146	125	140	11	121	176	306	507	665	382	244	242	3,165
1909	199	98	127	77	190	163	218	375	1,119	453	432	162	3,613
1910	154	294	152	120	187	168	246	617	614	513	468	202	3,735
1911	110	141	97	100	147	199	326	766	519	430	480	342	3,657
1912	238	142	101	125	127	164	273	585	538	390	198	195	3,076
1913	79	78	65	67	92	86	137	229	728	631	289	162	2,643
1914	100	75	64	127	108	147	200	303	470	337	170	159	2,260
1915	107	84	90	81	74	118	191	509	423	429	184	167	2,456
1916	66	63	66	86	116	115	132	258	281	223	133	90	1,629
1917	79	98	43	61	106	84	93	185	365	178	87	63	1,442
1918	30	28	35	53	51	164	170	265	209	125	52	56	1,238
1919	36	20	17	28	32	39	77	115	199	144	106	41	854
1920	47	14	25	26	29	51	78	199	196	142	92	70	969
1921	39	21	38	42	35	42	103	173	237	77	67	25	899

REST OF STATE

1908	288	293	217	174	191	236	211	449	532	541	342	337	3,811
1909	316	243	262	181	171	173	256	476	761	667	435	343	4,283
1910	302	272	305	202	187	188	240	586	843	780	521	375	4,801
1911	310	380	352	246	217	213	315	641	649	463	312	328	4,426
1912	245	174	235	309	287	125	248	422	444	446	215	192	3,342
1913	178	143	124	337	256	136	280	391	610	546	319	285	3,005
1914	203	163	226	229	232	178	216	391	519	439	251	174	3,221
1915	180	157	159	104	125	160	238	422	444	403	309	327	3,028
1916	140	148	100	179	157	194	248	393	514	307	216	192	2,788
1917	178	210	212	150	119	143	232	373	502	363	220	149	2,851
1918	90	97	135	140	143	93	144	280	388	362	153	128	2,153
1919	88	69	60	53	69	97	159	276	364	264	114	84	1,697
1920	71	36	50	180	74	103	100	192	383	239	178	119	1,725
1921	129	104	112	87	86	82	99	266	361	440	234	150	2,150

MEASLES

NEW YORK STATE

1908	5,796	7,984	12,019	11,021	9,777	5,241	1,900	515	449	606	1,147	2,103	58,738
1909	4,366	4,761	6,876	7,053	7,033	8,153	2,695	1,031	688	1,160	3,257	5,790	52,863
1910	9,726	10,047	13,770	9,931	10,490	6,837	2,474	883	452	722	1,598	2,953	69,878
1911	4,068	4,979	6,657	8,030	10,359	5,377	2,744	1,020	465	742	1,477	2,757	48,675
1912	4,831	6,426	10,721	11,342	11,284	7,522	3,684	1,156	575	1,203	2,485	4,070	65,299
1913	6,609	7,920	9,877	10,611	11,117	8,257	3,711	987	590	1,520	1,634	2,541	65,374
1914	4,366	5,258	6,989	7,892	8,876	6,447	2,873	1,123	533	671	1,057	1,798	47,883
1915	2,596	2,536	6,725	10,361	12,348	10,884	4,275	1,250	613	1,312	3,385	5,375	62,660
1916	6,412	7,344	10,189	11,761	11,997	9,578	5,112	1,073	345	397	975	1,832	67,110
1917	3,391	5,007	7,902	9,451	11,712	9,563	3,612	954	525	1,018	2,254	5,471	60,860
1918	7,767	8,570	13,662	14,834	14,407	7,661	4,814	1,329	456	586	430	353	74,869
1919	706	933	1,447	2,065	3,077	2,269	1,240	432	220	653	1,584	5,256	19,882
1920	10,928	11,231	10,758	10,535	11,018	9,054	4,130	1,190	507	1,213	3,190	4,732	78,481
1921	6,638	6,660	6,249	5,007	5,376	3,865	1,558	545	276	308	747	1,514	38,743

NEW YORK CITY

1908	3,388	4,973	8,306	7,060	5,974	3,852	1,587	373	375	465	744	1,376	38,473
1909	2,336	2,263	4,383	4,840	4,911	6,203	1,952	788	449	436	1,338	1,892	31,791
1910	3,735	4,560	8,205	6,036	6,425	3,229	1,259	561	232	280	582	706	35,816
1911	1,303	2,059	2,756	4,027	6,543	3,445	1,858	790	317	355	803	1,627	25,883
1912	2,670	4,219	7,713	7,938	7,272	4,132	1,982	604	221	317	769	1,420	39,257
1913	2,126	2,169	4,369	5,256	6,231	4,471	1,991	576	283	384	548	946	29,350
1914	1,519	2,190	3,483	4,485	5,483	4,094	1,734	534	244	324	679	1,024	25,793
1915	1,355	2,067	5,053	7,849	9,088	7,112	2,486	615	270	325	581	895	38,186
1916	1,242	1,894	3,281	4,208	4,579	3,398	1,813	417	119	74	127	456	21,603
1917	899	1,871	3,914	4,634	5,736	4,355	1,368	480	214	362	870	2,816	27,519
1918	4,264	4,477	6,845	6,003	4,536	1,812	664	241	114	76	67	76	28,675
1919	146	170	264	456	978	604	355	175	125	371	1,106	3,444	8,194
1920	7,756	7,784	6,813	5,777	3,922	1,811	354	150	67	134	199	136	35,083
1921	424	726	1,080	957	1,118	884	425	254	133	171	480	1,086	7,738

Table 2

IMPORTANT COMMUNICABLE DISEASES REPORTED BY MONTHS FOR NEW YORK STATE, NEW YORK CITY AND REST OF STATE, 1908–1921—(*Continued*)

MEASLES — (*Continued*)

REST OF STATE

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1908	2,408	3,011	3,713	4,141	3,803	1,389	313	142	74	141	403	727	20,265
1909	2,030	2,498	2,493	2,213	2,122	1,950	743	243	239	724	1,919	3,898	21,072
1910	5,991	5,481	5,565	3,895	4,065	3,608	1,215	322	220	442	1,011	2,247	34,062
1911	2,765	2,920	3,901	4,003	3,816	1,032	886	230	148	387	674	1,130	22,792
1912	2,161	2,207	3,008	3,404	4,012	3,390	1,702	552	354	886	1,716	2,650	26,042
1913	4,483	5,751	5,508	5,355	4,886	3,786	1,720	411	307	1,136	1,086	1,595	36.024
1914	2,847	3,068	3,506	3,407	3,393	2,353	1,139	589	289	347	378	774	22,090
1915	1,241	1,469	1,672	2,512	3,260	3,282	1,789	635	343	987	2,804	4,480	24,474
1916	5,170	5,450	6,908	7,553	7,418	6,180	3,399	656	226	323	848	1,376	45,507
1917	2,492	3,136	3,988	4,817	5,976	5,208	2,244	474	311	656	1,384	2,655	33,341
1918	3,503	4,093	7,317	8,831	9,871	5,849	4,150	1,088	342	510	363	277	46,194
1919	560	763	1,183	1,609	2,099	1,665	885	257	95	282	478	1,812	11,688
1920	3,172	3,447	3,945	4,758	7,091	7,243	3,776	1,040	440	1,079	2,991	4,416	43,398
1921	6,214	5,934	5,169	4,050	4,258	2,981	1,133	291	143	137	267	428	31,005

SCARLET FEVER

NEW YORK STATE

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1908	3,187	3,918	5,831	3,412	4,547	2,248	913	573	972	1,254	1,658	1,890	30,403
1909	2,696	2,517	3,175	2,475	2,253	1,890	724	608	754	1,150	1,962	2,543	22,747
1910	3,655	4,565	5,346	4,412	4,061	2,486	987	688	579	924	1,675	2,128	31,504
1911	3,084	3,839	4,127	3,749	4,043	1,813	774	493	453	882	1,273	1,565	26,095
1912	1,916	2,351	3,141	2,781	2,321	1,506	755	433	543	669	906	1,483	18,705
1913	2,221	2,183	2,730	2,294	2,037	1,310	663	436	535	663	867	1,324	17,263
1914	1,969	2,117	2,664	2,433	2,489	1,516	801	507	594	899	1,245	1,462	18,696
1915	1,785	1,852	2,252	2,431	2,068	1,437	676	345	320	629	882	1,125	15,802
1916	1,307	1,309	1,567	1,486	1,371	903	529	196	234	454	732	1,005	11,083
1917	1,450	1,706	2,237	2,426	1,745	1,079	575	276	436	810	1,194	1,300	15,234
1918	1,338	1,178	1,405	1,349	1,059	647	441	300	413	592	550	826	10,098
1919	1,096	1,285	1,557	1,237	1,214	731	445	286	546	907	1,172	1,599	12,075
1920	1,629	1,376	1,554	1,424	1,463	1,034	548	383	486	975	1,663	2,651	15,186
1921	3,914	3,808	3,645	2,770	2,240	1,697	593	466	707	1,269	1.974	2,580	25,663

NEW YORK CITY

1908	2,512	3,221	4,914	2,774	3,760	1,781	841	333	533	546	706	1,006	22,936
1909	1,657	1,498	1,964	1,355	1,317	1,096	361	289	378	505	1,147	1,437	13,004
1910	2,234	2,681	3,564	2,991	2,734	1,604	542	392	302	340	784	1,116	19,284
1911	1,795	2,593	2,395	2,433	2,858	1,187	453	302	209	383	665	785	16,058
1912	1,113	1,545	2,229	1,990	1,694	1,138	532	279	254	371	619	1,078	12,842
1913	1,505	1,437	1,852	1,526	1,245	747	355	232	253	313	488	786	10,739
1914	1,252	1,368	1,677	1,599	1,709	951	477	144	239	390	602	797	11,205
1915	1,094	1,021	1,592	1,781	1,392	987	409	179	147	232	395	520	9,879
1916	680	753	948	842	792	489	300	78	72	159	267	435	5,815
1917	578	657	622	775	872	515	267	105	178	345	527	619	6,060
1918	579	546	634	579	512	321	206	105	164	244	206	364	4,460
1919	510	553	676	579	554	280	146	81	144	239	295	537	4,594
1920	647	568	662	642	690	429	208	146	183	388	697	1,277	6,537
1921	2,213	2,244	2,255	1,689	1,274	904	214	157	206	407	770	1,183	13,516

REST OF STATE

1908	675	697	917	638	778	467	72	240	439	708	952	884	7,467
1909	1,039	1,019	1,211	1,120	936	794	363	319	376	645	815	1,106	9,423
1910	1,421	1,884	1,782	1,421	1,327	882	445	296	277	684	889	1,012	12,220
1911	1,289	1,246	1,732	1,316	1,185	626	321	191	244	499	708	780	10,037
1912	803	806	912	791	627	368	223	144	199	298	287	405	5,863
1913	716	746	878	768	792	563	308	204	282	350	379	538	6,524
1914	717	749	987	834	780	565	324	363	355	509	643	665	7,491
1915	691	651	660	700	676	450	267	166	173	397	487	605	5,923
1916	627	556	619	644	579	414	229	118	152	295	465	570	5,268
1917	872	1,049	1,615	1,651	873	564	308	171	258	465	667	681	9,174
1918	759	632	771	770	547	326	235	195	249	348	344	462	5,638
1919	586	732	881	658	660	451	299	205	402	668	877	1,062	7,481
1920	982	808	892	784	773	605	340	237	303	587	966	1,374	8,649
1921	1,701	1,564	1,390	1,081	966	793	379	309	501	862	1,204	1,397	12,147

WHOOPING COUGH

NEW YORK STATE

1908	......	......	......	......	......	......	......	......	......	......	......	......	......
1909	......	......	......	......	......	......	......	......	......	......	......	......	......
1910	......	......	......	......	......	......	......	......	......	......	......	......	......
1911	734	763	937	738	989	753	637	606	395	394	751	665	8,362
1912	976	771	709	778	925	753	700	473	368	405	458	506	7,821
1913	660	657	739	864	885	864	689	799	515	543	850	953	9,018
1914	1,070	899	1,177	1,429	1,553	1,307	766	755	542	598	664	911	11,671
1915	897	1,011	1,101	1,028	1,081	1,187	1,402	1,273	907	1,071	1,125	1,255	13,338
1916	1,417	1,320	1,798	1,889	2,239	2,044	2,250	1,688	755	581	681	635	17,297
1917	798	943	1,037	1,449	1,666	1,674	2,336	2,043	1,399	1,582	1,800	1,628	18,355
1918	2,293	1,849	2,116	2,017	2,049	1,647	1,523	1,092	761	432	411	332	16,522
1919	270	306	277	220	378	391	755	670	589	820	1,247	1,350	7,283
1920	1,968	1,628	2,181	1,557	1,620	1,808	2,075	1,906	1,438	1,174	1,703	2,168	21,224
1921	2,446	2,764	2,529	2,338	2,228	2,035	1,810	1,369	947	686	704	1,021	20,877

Table 2

IMPORTANT COMMUNICABLE DISEASES REPORTED BY MONTHS FOR NEW YORK STATE, NEW YORK CITY AND REST OF STATE, 1908–1921 — (*Continued*)

WHOOPING COUGH — (*Continued*)

NEW YORK CITY

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1908	......	......	......	......	......	......	......	......	......	......	......	......	....
1909	......	......	......	......	......	......	......	......	......	......	......	......	....
1910	......	......	......	......	......	......	......	......	......	......	......	......	....
1911	335	432	423	267	450	258	223	265	161	133	183	116	3,246
1912	187	173	246	200	327	231	201	136	114	113	129	126	2,183
1913	198	262	323	543	503	382	281	202	215	184	242	163	3,498
1914	220	258	275	489	387	393	318	374	286	336	253	229	3,818
1915	310	409	489	559	637	701	806	806	630	493	468	463	6,771
1916	465	526	930	1,094	1,140	1,033	968	755	246	121	97	85	7,460
1917	122	153	177	285	418	511	771	1,018	566	435	577	564	5,597
1918	824	786	812	800	675	491	482	298	151	101	80	58	5,558
1919	48	51	36	61	70	80	184	152	145	140	251	440	1,668
1920	816	816	1,076	702	624	675	699	664	534	297	298	333	7,534
1921	391	487	546	627	655	685	587	536	411	252	247	384	5,808

REST OF STATE

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1908	......	......	......	......	......	......	......	......	......	......	......	......	....
1909	......	......	......	......	......	......	......	......	......	......	......	......	....
1910	......	......	......	......	......	......	......	......	......	......	......	......	....
1911	399	331	514	471	539	495	414	341	234	261	568	549	5,116
1912	789	598	463	578	598	522	499	336	254	292	329	380	5,638
1913	462	395	416	321	382	482	408	597	300	359	608	790	5,520
1914	850	641	902	940	1,166	914	448	381	256	262	411	682	7,853
1915	587	602	612	469	444	486	596	467	277	578	657	792	6,567
1916	952	794	868	795	1,099	1,011	1,282	933	509	460	584	550	9,837
1917	676	790	860	1,164	1,248	1,163	1,565	1,025	833	1,147	1,223	1,064	12,758
1918	1,469	1,063	1,304	1,217	1,374	1,156	1,041	794	610	331	331	274	10,964
1919	222	255	241	159	308	311	571	518	444	680	996	910	5,615
1920	1,152	812	1,109	855	996	1,131	1,376	1,242	904	877	1,405	1,835	13,694
1921	2,055	2,277	1,983	1,711	1,573	1,350	1,223	833	536	434	457	637	15,069

DIPHTHERIA

NEW YORK STATE

1908	2,134	2,015	2,308	1,828	1,888	1,522	1,151	787	1,415	1,805	1,960	2,006	20,759
1909	2,406	2,082	2,118	1,584	1,591	1,899	1,126	916	1,291	1,421	2,299	1,982	20,665
1910	2,018	2,025	2,489	2,447	2,654	1,835	1,468	1,363	1,010	1,509	2,144	1,668	22,630
1911	1,937	2,189	1,783	1,617	2,167	1,628	1,209	1,349	1,152	1,456	2,004	1,926	20,417
1912	1,897	1,754	1,890	1,653	1,593	1,577	282	1,051	976	1,639	1,892	1,938	18,141
1913	2,191	1,907	1,909	1,879	1,865	1,660	1,287	986	1,131	1,631	1,338	2,463	20,247
1914	2,061	2,151	1,894	1,873	2,139	2,048	1,618	1,104	1,358	1,964	2,216	2,111	22,537
1915	1,995	1,963	2,074	1,671	1,733	1,970	1,388	1,018	1,103	1,794	2,053	2,044	20,806
1916	2,165	1,867	1,975	1,688	2,152	1,992	1,418	828	802	1,240	1,403	1,603	19,133
1917	1,744	1,715	767	1,590	1,711	1,582	1,303	1,010	1,196	1,966	1,889	1,710	19,188
1918	1,582	1,261	1,549	1,651	696	1,606	1,229	818	821	1,303	1,293	774	14,533
1919	2,224	2,111	2,437	2,081	2,282	2,069	1,403	1,198	1,459	2,313	2,538	2,962	25,077
1920	2,574	1,816	2,146	1,961	2,076	1,992	1,308	974	1,021	1,964	3,394	3,582	24,808
1921	3,493	3,363	2,887	2,504	2,362	2,260	1,110	1,078	1,230	1,887	2,443	2,412	27,029

NEW YORK CITY

1908	1,683	1,537	1,893	1,573	1,544	1,284	1,043	601	1,091	1,238	1,347	1,535	16,369
1909	1,926	1,613	1,735	1,281	1,325	1,583	859	677	974	963	1,715	1,401	16,052
1910	1,514	1,581	2,087	2,044	2,229	1,532	1,220	1,032	652	934	1,375	1,028	17,236
1911	1,335	1,692	1,350	1,235	1,686	1,152	811	914	613	753	1,214	1,139	13,894
1912	1,159	1,241	1,386	1,274	1,199	1,215	......	764	656	1,127	1,310	1,416	12,747
1913	1,642	1,449	1,455	1,466	1,474	1,310	962	715	734	918	806	1,654	14,585
1914	1,546	1,642	1,512	1,567	1,802	1,737	1,326	838	941	1,271	1,364	1,518	17,129
1915	1,435	1,533	1,610	1,352	1,341	1,684	1,120	768	722	1,081	1,293	1,390	15,279
1916	1,572	1,485	1,570	1,329	1,715	1,570	1,064	511	433	608	734	930	13,521
1917	1,109	1,194	1,211	1,132	1,267	1,198	934	660	680	1,086	1,091	1,062	12,624
1918	1,047	898	1,086	1,249	288	1,231	898	541	472	801	836	112	9,454
1919	1,327	1,359	1,609	1,412	1,607	1,294	800	608	582	868	1,062	1,491	14,014
1920	1,492	1,229	1,364	1,345	1,308	1,246	817	522	522	934	1,535	1,852	14,166
1921	2,067	2,097	1,922	1,650	1,618	1,388	647	443	486	697	967	1,128	15,110

REST OF STATE

1908	451	478	415	250	289	238	108	186	324	567	613	471	4,390
1909	480	419	383	303	266	316	267	239	317	458	584	581	4,613
1910	504	444	402	403	425	303	248	331	358	577	769	640	5,404
1911	602	497	433	382	481	476	398	435	539	703	790	787	6,523
1912	738	513	504	379	393	362	282	287	320	512	582	522	5,394
1913	549	458	454	413	391	350	325	271	397	718	532	809	5,662
1914	515	509	382	306	337	311	222	266	417	693	852	598	5,408
1915	560	430	464	319	392	336	268	250	381	713	760	654	5,527
1916	593	382	405	359	437	422	354	317	369	632	669	673	5,612
1917	635	521	556	458	444	384	369	350	516	880	798	648	6,559
1918	485	363	463	402	408	375	336	277	349	502	457	662	5,079
1919	897	752	828	669	675	775	603	595	877	1,445	1,476	1,471	11,063
1920	1,082	587	782	616	768	746	491	452	499	1,030	1,859	1,730	10,642
1921	1,426	1,266	965	854	744	872	463	635	744	1,190	1,476	1,284	11,919

Table 2

IMPORTANT COMMUNICABLE DISEASES REPORTED BY MONTHS FOR NEW YORK STATE, NEW YORK CITY AND REST OF STATE, 1908–1921 — (*Concluded*)

TUBERCULOSIS

NEW YORK STATE

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1908	1,865	1,802	2,775	2,216	1,982	2,021	2,297	1,962	2,657	2,328	2,097	2,228	26,230
1909	3,739	2,352	3,097	3,015	2,671	2,783	2,638	3,529	2,664	2,276	2,943	2,208	32,915
1910	2,416	3,203	4,497	3,969	3,418	2,692	2,621	3,375	2,856	2,684	3,240	2,992	37,963
1911	3,038	3,662	3,219	2,774	3,519	2,374	2,599	3,030	2,395	2,198	2,734	2,441	33,983
1912	2,527	2,630	2,687	2,596	3,005	2,615	2,624	2,317	2,457	2,650	2,136	2,285	30,529
1913	2,765	2,534	3,113	3,101	2,636	2,574	2,941	2,162	2,339	2,526	2,306	2,216	31,123
1914	2,478	2,241	2,762	2,833	2,724	2,914	2,495	2,353	2,528	3,012	2,257	2,531	31,128
1915	2,570	2,703	3,337	3,152	2,899	2,847	2,719	2,668	2,927	2,604	2,548	2,762	33,736
1916	2,515	2,841	3,159	3,008	2,946	3,244	2,532	2,595	2,461	3,150	2,302	2,306	32,059
1917	2,997	2,319	3,015	2,197	2,321	2,366	2,475	2,758	1,939	2,382	3,142	1,775	28,686
1918	2,361	2,053	2,263	2,809	2,397	2,757	1,850	2,322	1,614	1,356	1,275	1,407	24,464
1919	1,975	1,941	2,277	2,179	2,299	2,218	2,037	2,051	1,884	2,590	1,993	2,038	25,482
1920	1,680	1,794	2,280	2,159	2,285	2,350	1,923	1,727	1,820	1,239	1,640	1,789	23,796
1921	2,099	1,518	2,031	2,264	1,959	2,014	1,833	1,881	1,859	1,798	1,480	1,785	22,521

NEW YORK CITY

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1908	1,609	1,518	2,445	1,936	1,673	1,674	2,160	1,755	2,431	2,023	1,826	1,869	22,920
1909	2,270	1,176	2,505	2,452	2,297	2,298	1,913	2,019	2,352	1,839	2,483	1,786	25,979
1910	2,249	2,745	3,974	3,518	2,966	2,178	2,131	2,890	2,402	1,974	2,729	2,250	32,006
1911	2,380	2,860	2,340	2,068	2,638	1,745	1,773	2,309	1,768	1,593	2,033	1,690	25,197
1912	2,012	2,053	2,030	1,985	2,299	1,836	1,835	1,716	1,806	1,860	1,589	1,731	22,752
1913	2,015	1,883	2,460	2,353	2,019	1,927	1,868	1,515	1,666	1,773	1,663	1,532	22,674
1914	1,699	1,565	1,954	1,955	1,974	2,037	1,769	1,675	1,772	1,867	1,548	1,787	21,602
1915	1,849	2,009	2,303	2,202	1,985	1,880	1,818	1,487	1,935	1,615	1,448	1,610	22,141
1916	1,613	1,638	2,053	1,749	1,602	1,800	1,418	1,505	1,531	1,322	1,475	1,586	19,292
1917	2,011	1,292	2,000	1,174	1,266	1,310	1,469	1,804	1,119	1,491	1,385	1,098	17,414
1918	1,538	1,344	1,866	1,698	1,300	1,759	873	1,326	902	721	707	805	14,839
1919	1,270	1,294	1,500	1,374	1,311	1,260	869	1,123	775	1,578	1,207	1,014	14,570
1920	957	1,163	1,566	1,255	1,211	1,325	994	986	964	1,515	974	1,125	14,035
1921	988	896	1,251	1,408	1,117	1,254	1,149	1,074	1,105	1,160	955	1,098	13,455

REST OF STATE

1908	256	284	330	279	309	347	137	207	226	305	271	359	3,310
1909	1,469	587	592	563	374	485	725	510	312	437	460	422	6,936
1910	167	458	523	451	452	514	490	485	454	710	511	742	5,957
1911	658	802	879	706	881	629	826	721	627	605	701	751	8,786
1912	515	577	657	611	706	779	789	601	651	790	547	554	7,777
1913	750	651	653	658	617	647	1,073	647	673	753	643	684	8,449
1914	779	676	808	879	750	877	726	678	756	1,145	709	744	9,526
1915	721	694	1,034	950	914	967	901	1,181	992	929	1,100	1,152	11,595
1916	902	1,203	1,106	1,259	1,344	1,444	1,114	1,090	930	828	827	720	12,767
1917	986	1,027	1,015	1,023	1,055	1,056	1,006	954	820	891	757	682	11,272
1918	823	709	897	1,111	1,097	998	977	996	712	635	658	602	10,125
1919	705	647	777	805	988	958	1,168	928	1,109	1,017	786	1,024	10,912
1920	723	631	714	904	1,074	1,025	929	741	856	834	666	664	9,761
1921	1,111	622	780	856	842	760	684	807	754	638	525	687	9,066

Table 3

REPORTED CASES, DEATHS, CASE FATALITY RATE PERCENT, CASE AND DEATH RATES PER 100,000 POPULATION FOR CERTAIN COMMUNICABLE DISEASES, BY COUNTIES, 1921

COUNTIES	TYPHOID FEVER					MEASLES					SCARLET FEVER					WHOOPING COUGH					DIPHTHERIA				
	Cases	Deaths	Case fatality rate	Case rate	Death rate	Cases	Deaths	Case fatality rate	Case rate	Death rate	Cases	Deaths	Case fatality rate	Case rate	Death rate	Cases	Deaths	Case fatality rate	Case rate	Death rate	Cases	Deaths	Case fatality rate	Case rate	Death rate
NEW YORK STATE	3,049	378	12.4	29	3.6	38,743	409	1.1	366	3.9	25,663	668	2.6	243	6.3	20,877	755	3.6	197	7.1	27,029	1,701	6.3	255	16.1
NEW YORK CITY	899	124	13.8	16	2.2	7,738	165	2.1	135	2.9	13,516	385	2.9	235	6.7	5,808	350	6.0	101	6.1	15,110	892	5.9	263	15.5
STATE (exc. of N. Y. City)	2,150	254	11.8	45	5.3	31,005	244	.8	642	5.1	12,147	283	2.3	251	5.9	15,069	405	2.7	312	8.4	11,919	809	6.8	247	16.8
Albany	52	8	15.4	28	4.3	1,474	8	.5	784	4.3	216	6	2.8	115	3.2	533	20	3.8	283	10.6	404	31	7.7	215	16.7
Allegany	25	6	24.0	69	16.6	320	1	.3	886	2.8	153	2	1.3	423	5.5	97	3	3.1	268	8.3	56	6	10.7	155	16.6
Broome	22	4	18.2	18	3.4	1,934	11	.6	1,625	9.2	554	8	1.4	466	6.7	171	3	1.8	144	2.5	333	16	4.8	280	13.4
Cattaraugus	35	3	8.6	49	4.2	314	....	....	435	....	124	3	2.4	172	4.2	184	4	2.2	255	5.5	137	6	4.4	190	8.3
Cayuga	16	4	25.0	25	6.2	81	....	....	125	....	194	3	1.5	299	4.6	99	2	2.0	152	3.1	146	15	10.3	225	23.1
Chautauqua	31	4	12.9	27	3.4	1,615	3	.2	1,381	2.6	268	4	1.5	229	3.4	334	3	.9	286	2.6	342	21	6.1	292	18.0
Chemung	85	6	7.1	126	8.9	203	2	1.0	300	3.0	127	4	3.1	188	5.9	276	3	1.1	408	4.4	68	7	10.3	101	10.4
Chenango	9	2	22.2	26	5.7	58	....	....	166	....	52	3	5.8	149	8.6	74	2	2.7	212	5.7	16	4	25.0	46	11.5
Clinton	18	2	11.1	42	4.6	270	....	....	625	....	169	7	4.1	391	16.2	87	1	1.1	201	2.3	55	6	10.9	127	13.9
Columbia	7	....	....	18	....	82	....	....	215	....	78	1	1.3	204	2.6	84	....	....	220	....	58	1	1.7	152	2.6
Cortland	17	3	17.6	57	10.1	51	....	....	172	....	150	....	....	505	....	71	3	4.2	239	10.1	58	4	6.9	195	13.5
Delaware	33	1	3.0	78	2.4	667	6	.9	1,575	14.2	34	....	....	80	....	121	1	.8	286	2.4	29	4	13.8	68	9.4
Dutchess	71	5	7.0	77	5.4	57	....	....	62	....	128	3	2.3	139	3.2	266	5	1.9	288	5.4	126	9	7.1	136	9.7
Erie	235	27	11.5	36	4.1	2,874	36	1.3	441	5.5	1,625	64	3.9	250	9.8	3,028	101	3.3	465	15.5	2,576	164	6.4	396	25.2
Essex	4	....	....	13	....	208	2	1.0	658	6.3	60	2	3.3	190	6.3	18	1	5.6	57	3.2	16	....	....	51	....
Franklin	37	6	16.2	86	13.9	458	10	2.2	1,060	23.1	43	2	4.7	100	4.6	31	3	9.7	72	6.9	34	4	11.8	79	9.3
Fulton	10	1	10.0	22	2.2	62	1	1.6	138	2.2	65	6	9.2	144	13.3	201	5	2.5	447	11.1	25	10	40.0	56	22.2
Genesee	9	2	22.2	24	5.3	7	....	....	18	....	70	....	....	184	....	129	6	4.7	339	15.8	45	7	15.6	118	18.4
Greene	22	3	13.6	88	11.9	163	2	1.2	649	8.0	32	....	....	127	....	164	3	1.8	653	11.9	28	4	14.3	111	15.9
Hamilton	3	....	....	77	....	4	....	....	102	....	1	....	....	26	....	15	....	....	384	....	....	....	....	....	....

Herkimer	17	6	35.3	26	9.1	294	2	.7	443	3.0	91	4	4.4	137	6.0	102	4	3.9	154	6.0	96	10	10.2	148	15.1
Jefferson	50	5	10.0	61	6.1	1,784	7	.4	2,161	8.5	218	3	1.4	258	3.6	142	4	2.8	172	4.8	44	....	....	53	....
Lewis	9	2	22.2	38	8.5	77	1	1.3	337	4.3	44	2	4.5	187	8.5	19	1	5.3	81	4.3	2	2	100.	9	8.5
Livingston	10	2	20.0	27	5.5	37	....	....	101	....	59	2	3.4	161	5.5	220	7	3.2	600	19.1	55	5	9.1	150	13.6
Madison	16	3	18.8	40	7.6	202	1	.5	510	2.5	115	1	.9	591	2.5	150	1	.7	379	2.5	56	3	5.4	142	7.6
Monroe	89	12	13.5	25	3.3	96	2	2.1	28	.6	818	30	3.7	224	8.3	933	45	4.8	257	12.4	1,650	82	5.0	455	22.6
Montgomery	8	....	....	14	....	277	....	....	478	....	32	....	....	55	....	193	1	.5	333	1.7	122	5	4.1	210	3.6
Nassau	18	5	27.8	14	3.8	441	5	1.1	332	3.8	291	2	.7	219	1.5	307	10	3.3	231	7.5	172	9	5.2	130	6.8
Niagara	77	9	11.7	63	7.3	667	10	1.5	543	8.1	850	12	1.4	692	9.8	304	10	3.3	248	8.1	632	46	7.3	515	37.5
Oneida	62	11	17.7	33	5.9	2,164	36	1.7	1,156	19.2	270	3	1.1	144	1.6	460	12	2.6	246	6.4	542	59	10.9	289	31.5
Onondaga	196	10	5.1	79	4.0	1,451	7	.5	585	2.8	1,093	24	2.2	441	9.7	696	26	3.7	281	10.5	1,292	95	7.4	521	38.3
Ontario	21	1	4.8	40	1.9	37	....	....	70	....	113	1	.9	214	1.9	249	6	2.4	472	11.4	119	7	5.9	226	13.3
Orange	29	5	17.2	24	4.2	768	10	1.3	638	8.3	330	9	2.7	274	7.5	276	14	5.1	229	11.6	167	13	7.8	139	10.8
Orleans	16	1	6.3	57	3.6	248	....	....	883	....	42	2	4.8	149	7.1	68	3	4.4	242	10.7	17	1	5.9	61	3.6
Oswego	36	3	8.3	51	4.2	195	1	.5	275	1.4	269	1	.4	379	1.4	114	4	3.5	161	5.6	121	12	9.9	171	16.9
Otsego	30	4	13.3	65	8.7	451	4	.9	980	3.7	110	1	.9	239	2.2	110	3	2.7	239	6.5	34	2	5.9	74	4.3
Putnam	....	....	....	....	....	39	....	....	382	....	13	....	....	127	....	112	....	....	98	....	32	2	6.3	314	....
Rensselaer	47	8	17.0	42	7.2	1,834	13	.7	1,642	11.6	118	3	2.5	106	2.7	357	15	4.2	320	13.4	104	11	10.6	98	9.8
Rockland	8	....	....	18	....	247	2	.8	545	4.4	105	1	1.0	232	2.2	189	4	2.1	417	8.8	105	6	5.7	232	13.2
St. Lawrence	159	12	7.5	181	13.6	872	5	.6	991	5.7	230	1	.4	261	1.1	104	2	1.9	118	2.3	90	9	10.0	102	10.2
Saratoga	53	....	....	89	....	1,427	16	1.1	2,389	26.8	111	4	3.6	186	6.7	281	3	1.1	470	5.0	49	3	6.1	82	5.0
Schenectady	37	8	21.6	33	7.1	648	3	.5	575	2.7	289	10	3.5	257	8.9	569	3	.5	505	2.7	351	14	4.0	312	12.4
Schoharie	4	....	....	19	....	166	1	.6	794	4.8	60	2	3.3	287	9.6	7	1	14.3	33	4.8	6	1	16.7	29	4.8
Schuyler	5	....	....	39	....	58	....	....	448	....	10	....	....	77	....	144	1	.7	1,111	7.7	4	....	....	31	. .
Seneca	33	5	15.2	135	20.5	296	....	....	1,214	....	98	....	....	402	....	90	1	1.1	369	4.1	31	....	....	127	....
Steuben	34	8	23.5	42	10.0	123	....	....	153	....	163	5	3.1	203	6.2	318	8	2.5	396	10.0	70	4	5.7	87	5.0
Suffolk	79	6	7.6	70	5.3	96	....	....	85	....	154	5	3.2	137	4.4	388	8	2.1	345	7.1	242	23	9.5	215	20.5
Sullivan	15	2	13.3	45	6.0	116	....	....	351	....	93	....	....	181	....	108	....	....	327	....	43	3	7.0	130	9.1
Tioga	15	4	26.7	63	16.7	104	3	2.9	433	12.5	37	1	2.7	154	4.2	16	1	6.3	67	4.2	64	6	9.4	267	25.0
Tompkins	31	3	9.7	87	8.4	374	1	.3	1,062	2.8	79	....	....	222	....	37	1	2.7	104	2.8	116	3	2.6	326	8.4
Ulster	38	7	18.4	52	9.7	345	....	....	477	....	145	8	5.5	200	11.1	180	2	1.1	249	2.8	108	9	8.3	149	12.4
Warren	15	1	6.7	47	3.2	531	4	.8	1,681	12.7	15	....	....	47	....	25	....	....	79	....	16	....	....	51	....
Washington	20	....	....	45	....	1,659	8	.5	3,733	18.0	82	....	....	185	....	35	....	....	79	....	33	1	3.0	74	2.3
Wayne	22	5	22.7	45	10.3	200	1	.5	411	2.1	128	3	2.3	263	6.2	271	4	1.5	557	8.2	85	6	7.1	175	12.3
Westchester	97	12	12.4	27	3.4	1,684	13	1.1	476	5.1	1,283	24	1.9	363	6.8	1,391	22	1.6	393	6.2	667	29	4.3	188	8.2
Wyoming	8	1	12.5	27	3.3	81	1	1.2	269	3.3	24	....	....	80	....	82	1	1.2	273	3.3	16	1	6.3	53	3.3
Yates	5	....	....	31	....	14	....	....	33	....	32	....	....	196	....	39	1	2.6	239	6.1	12	1	8.3	73	6.1
State Institutions	....	6	....	....	....	....	....	....	....	....	....	1	....	....	....	....	7	....	....	....	....	7	....	....	....

Table 4

COMMUNICABLE DISEASES REPORTED, BY COUNTIES, 1921

	Typhoid fever	Measles	Scarlet fever	Whooping cough	Diphtheria	Smallpox	TUBERCULOSIS			Cerebrospinal meningitis	Chickenpox	German measles	Mumps	Puerperal septicemia	Poliomyelitis	Paratyphoid	Septic sore throat	Dysentery	Lobar pneumonia	Bronchopneumonia	Influenza	Encephalitis lethargica	Anthrax	Tetanus	Trachoma	Typhus fever	Botulism	Rabies
							Pulmonary	Other forms	Total																			
New York State......	3,049	38,743	25,663	20,877	27,029	631	21,084	1,437	22,521	408	20,983	2,856	12,806	452	1,153	78	478	84	19,837	4,215	3,812	736	12	82	84	41	15	4
New York City......	899	7,738	13,516	5,808	15,110	29	12,966	489	13,455	279	8,041	1,650	3,627	318	588	33	10	1	14,143	......	2,486	528	7	32	59	38	14	3
Rest of State.........	2,150	31,005	12,147	15,069	11,919	602	8,118	948	9,066	129	12,942	1,206	9,179	134	565	45	468	83	5,694	4,215	1,326	208	5	50	25	3	1	1
COUNTY																												
Albany.............	52	1,474	216	533	404	2	360	51	411	4	663	35	41	6	5	1	13	1	263	286	160	9	..	1	..	..	..	..
Allegany............	25	320	153	97	56	....	20	1	21	1	189	3	151	2	1	1	3	....	42	60	13	1	..	2	..	..	..	..
Broome............	22	1,934	554	171	333	3	189	12	201	1	468	5	75	4	7	3	12	2	329	94	64	8	..	..	..	..	..	..
Cattaraugus.........	35	314	124	184	137	2	68	5	73	1	136	5	190	4	10	2	2	....	73	59	8	2	..	2	..	..	..	..
Cayuga.............	16	81	194	99	146	31	52	8	60	....	56	2	192	1	2	....	2	....	63	30	9	....	..	2	..	..	..	..
Chautauqua.........	81	1,615	268	334	342	13	160	41	201	2	534	50	781	7	5	....	65	1	133	69	48	5	..	2	..	..	..	..
Chemung...........	85	203	127	276	68	....	105	5	110	2	377	2	245	3	2	1	1	....	84	59	3	3	..	1	..	..	..	..
Chenango...........	9	58	52	74	16	1	13	3	16	....	43	5	181	1	7	....	....	....	38	13	42	2	..	..	..	..	..	..
Clinton............	18	270	169	87	55	....	34	5	39	1	62	1	48	2	1	1	1	....	40	24	1	....	..	..	..	..	..	..
Columbia...........	7	82	78	84	58	1	65	9	74	....	38	1	9	2	7	....	1	....	35	31	25	2	..	..	..	..	..	..
Cortland...........	17	51	150	71	58	....	23	6	29	....	55	28	12	1	3	....	....	....	39	22	38	....	..	..	..	2	..	..
Delaware...........	33	667	34	121	29	6	35	3	38	1	66	2	28	5	15	....	6	1	39	34	77	2	1	..	..	..	..	..
Dutchess...........	71	57	128	266	126	....	148	12	160	1	330	17	190	2	6	1	1	....	109	83	14	1	..	3	1	..	..	..
Erie..............	235	2,874	1,625	3,028	2,576	46	942	144	1,086	27	1,582	10	1,689	5	27	4	33	2	770	757	60	22	..	1	5	..	..	..
Essex.............	4	208	60	18	16	....	203	5	208	1	40	......	34	1	4	....	....	1	18	22	14	2	..	1	..	..	..	..
Franklin...........	37	458	43	31	34	6	1,103	56	1,159	1	30	1	6	....	3	....	5	....	41	31	15	....	..	..	..	..	..	..
Fulton............	10	62	65	201	25	....	47	16	63	3	47	1	1	....	2	....	....	1	40	26	17	....	..	..	..	..	..	..
Genesee...........	9	7	70	129	45	5	21	3	24	2	76	1	36	....	5	....	....	....	26	25	2	....	..	..	..	..	..	..
Greene............	22	163	32	164	28	....	59	5	64	1	52	8	11	....	6	....	....	....	15	16	15	2	..	..	..	..	..	..
Hamilton...........	8	4	1	15	......	....	8	1	9	....	5	......	......	....	1	....	....	....	1	3	1	....	..	..	..	..	..	..
Herkimer...........	17	294	91	102	98	....	91	9	100	1	247	4	133	7	39	1	....	....	89	37	9	....	..	1	..	..	..	..

Jefferson	50	1,784	213	142	44	37	67	9	76	1	397	8	345	1	12	5	13	9	38	57	7	4	..	..	3	..	..	..
Lewis	9	77	44	19	3	52	18	2	20	....	45	1	2	....	9	....	....	....	19	6	1	....	1	..	..	..	..	..
Livingston	10	37	59	220	55	....	17	......	17	....	91	1	117	....	1	....	2	2	66	39	2	....	..	3	..	..	..	..
Madison	16	302	115	150	56	70	22	4	26	1	182	3	65	1	3	....	1	2	46	29	......	1	..	..	..	..	..	..
Monroe	89	96	813	983	1,650	3	607	57	664	1	528	3	232	12	15	....	....	1	542	54	11	13	..	3	5	..	..	..
Montgomery	8	277	32	193	123	....	69	8	77	5	173	5	35	....	11	....	100	3	62	22	79	3	..	..	..	..	..	..
Nassau	18	441	291	307	172	....	116	18	134	3	269	23	104	1	21	....	....	2	120	93	18	2	..	2	..	..	..	..
Niagara	77	667	850	304	632	73	178	23	201	7	623	4	952	3	1	....	2	....	117	106	29	3	..	..	1	..	..	..
Oneida	82	2,164	270	460	542	1	217	58	275	5	322	139	225	6	163	....	....	1	204	222	38	2	..	2	1	..	..	..
Onondaga	196	1,451	1,093	696	1,292	5	306	29	335	8	591	23	243	6	22	....	1	3	212	209	8	6	..	..	..	..	..	..
Ontario	21	37	113	249	119	82	59	5	64	....	301	15	226	1	1	3	5	8	70	97	4	9	..	..	..		..	..
Orange	29	768	330	276	167	....	157	23	180	3	244	31	76	1	7	....	7	6	126	110	22	12	..	..	..	..	..	..
Orleans	16	248	42	68	17	3	28	3	31	....	5	......	20	....	4	....	2	....	14	20	1	1	..	..	..	..	..	..
Oswego	36	195	269	114	121	6	91	7	98	1	171	4	26	2	13	....	1	....	100	58	1	6	..	1	..	..	..	..
Otsego	30	451	110	110	34	....	23	4	27	2	39	1	13	5	8	3	4	....	47	38	56	....	..	..	..	..	..	..
Putnam	......	39	13	112	32	....	23	2	25	2	69	4	8	....	......	....	3	....	7	5	11	1	..	1	1	..	..	..
Rensselaer	47	1,834	118	357	104	15	177	28	205	2	187	7	126	....	7	1	....	....	84	158	73	4	..	1	..	..	..	..
Rockland	8	247	105	189	105	....	72	10	82	3	83	26	29	1	2	1	....	....	47	22	6	3	1	2	..	..	..	..
St. Lawrence	159	872	230	104	90	47	69	7	76	....	130	......	10	2	3	....	....	....	81	69	17	5	..	1	1	1	..	..
Saratoga	53	1,427	111	281	49	10	99	9	108	3	126	2	24	2	5	....	3	4	57	80	56	5	..	1	1	..	..	..
Schenectady	37	648	289	569	351	1	127	15	142	5	419	2	85	5	10	....	3	1	86	77	4	6	..	2	..	..	..	..
Schoharie	4	166	60	7	6	....	13	1	14	1	64	......	4	1	7	....	12	7	11	11	......	....	..	..	..	..	..	..
Schuyler	5	58	10	144	4	....	10	4	14	....	34	......	108	....	1	....	8	....	9	11	......	1	..	..	..	..	..	..
Seneca	33	296	98	90	31	35	18	3	21	2	90	4	6	1	2	....	....	....	33	36	3	....	..	..	..	..	..	..
Steuben	34	123	163	318	70	....	97	9	106	....	98	6	294	1	1	5	2	....	55	64	15	8	1	3	..	..	1	..
Suffolk	79	96	154	388	242	....	128	23	161	....	192	8	82	5	17	....	6	2	146	143	110	7	..	2	3	..	..	..
Sullivan	15	116	93	108	43	....	690	54	744	1	94	8	28	3	5	....	2	....	23	36	2	1	..	..	..	..	..	..
Tioga	15	104	37	16	64	....	14	......	14	2	32	6	21	....	3	2	52	....	30	25	1	2	..	..	..	..	..	1
Tompkins	31	374	79	37	116	....	31	8	39	....	73	10	27	2	3	1	....	....	50	27	4	5	1	..	..	..	..	..
Ulster	38	345	145	180	108	2	101	9	110	....	268	16	411	2	6	2	....	....	79	42	12	....	..	..	..	..	..	..
Warren	15	531	15	25	16	....	59	6	65	....	120	......	32	1	......	....	....	1	22	22	......	2	..	1	..	..	..	..
Washington	20	1,659	82	35	33	23	45	11	56	....	103	48	3	....	2	3	5	....	42	34	12	5	..	1	..	..	..	..
Wayne	22	200	128	271	85	12	55	11	66	1	204	2	280	1	1	1	....	1	60	44	1	1	..	..	..	..	..	..
Westchester	97	1,684	1,283	1,391	667	1	525	83	608	18	1,399	607	761	14	40	4	78	21	657	342	87	27	..	6	2	..	..	..
Wyoming	8	81	24	82	16	....	27	4	31	1	47	1	50	1	1	....	11	....	36	21	......	1	..	2	1	..	..	..
Yates	5	14	32	39	12	8	17	1	18	1	23	7	56	....	......	....	....	....	4	5	......	1	..	..	..	..	..	..

Summary of Clerical Work — 1921

Number imported infection blanks received (Part I)	295
Number imported infection blanks received (Part II)	133
Number follow-up letters sent to health officers	357
Number follow-up letters sent to sanitary supervisors	85
Number dictated communications (including telegrams)	7,295
Number reciprocal blanks received	44
Number reciprocal blanks sent	54

Diphtheria

Number positive laboratory reports received	11,316
Number first notices sent to health officers (unreported cases)	493
Number answers received	370
Number second notices sent to health officers	117
Number remaining	59

Typhoid Fever

Number positive laboratory reports received	847
Number first notices sent to health officers (unreported cases)	183
Number answers received	136
Number second notices sent to health officers	44
Number remaining	21
Number cards punched for tabulating machines	66,613

Report of Health Officers' Work

Average number of districts for year	1,281
Average number of vacancies for year	29
Average number of districts delinquent on the 10th	328
Average number of districts delinquent on the 15th	211
Average number of districts delinquent on the 31st	69
Average number of health officers for year	951
Average number of health officers delinquent on the 10th	251
Average number of health officers delinquent on the 15th	158
Average number of health officers delinquent on the 31st	50
Suggestion sheets sent to health officers	*305
First delinquent notices sent to health officers	*1,300
Second delinquent notices sent to health officers	*586
Packages of health officers' reports sent to S. S	*108
Delinquent notices to city health officers	*24
Deaths from communicable diseases carded and records searched for communicable disease reports	†3,166

Telegrams received from dairy farms:	
Scarlet fever	143
Diphtheria	51
Typhoid	24
Smallpox	5
Poliomyelitis	18
Streptococcus	1

Total number of communicable diseases reported and tabulated by municipalities in weekly reports	109,170

Letters Relative to Deaths from Communicable Disease — Cases Unreported

Sent to health officers	‡202
Received from health officers	‡145
Sent to physicians	‡133
Received from physicians	‡85

* For nine months only.
† For four months only.
‡ For five months only.

DIVISION OF LABORATORIES AND RESEARCH

DIVISION OF LABORATORIES AND RESEARCH

HERMANN M. BIGGS, M. D., *Commissioner, State Department of Health, Albany, New York.*

DEAR SIR.— For the Division of Laboratories and Research the year 1921 has been characterized by retrenchment, consolidation and standardization. No new activities have been undertaken; one important branch, the production and free distribution of arsphenamine, has been discontinued. To the effectiveness of this consolidation the revision of the budget, which the legislative committees suggested last year, making maintenance and operation one item, segregating personal services into groups and providing adequate sums for temporary services and contingencies, has contributed more than anything else. This classification has made the appropriation flexible to meet emergencies. It has eliminated to a large extent the serious labor turnover of the past three or four years, has effected a saving of at least $20,000, and has stimulated the spirit and morale of the entire staff.

There are many noteworthy features in every department and general progress throughout the laboratory to be recorded, with one exception. The housing of work of such vital importance to the state stands in striking contrast to all else. The one building suited to laboratory work is now overcrowded well beyond the point of safety; the other buildings on Yates Street and at the farm are a disgrace to any institution and a constant menace, and have been condemned in scathing terms by the federal authorities.

Work of the Assistant Director Through the work of the Assistant Director, Dr. Paul B. Brooks, the cooperation of the laboratory with the other divisions of the department and with the local health officers has been improved. The operation of laboratory supply stations has been made more effective, local laboratories have been established, and the laboratory field investigations have been more satisfactorily conducted. He has taken more active supervision of the courses of instruction in public health and of the practical training in laboratory work of volunteers and visitors from other states and foreign countries. This practical training of expert technicians, bacteriologists, and directors of laboratories is a most important work which in many ways will, year by year, not only redound to the credit of the laboratory but will strengthen and improve the standards of laboratory service throughout the State.

Antitoxin, Serum and Vaccine Laboratories

The antitoxin, serum and vaccine laboratories have demonstrated the value and economy of maintaining an adequate staff. For the first time in seven years, this staff has been able to carry on the routine work and study a few of the more important problems which already have led to improvement in methods and have lowered the cost of production. The discontinuance of the production and free distribution of arsphenamine is to be regretted, but, with insufficient appropriations, the work could have been carried only at the sacrifice of all other branches of the laboratory.

Diagnostic Laboratories

Only a moderate increase in the number of specimens examined is shown in the tabulated reports of the diagnostic laboratories. On the other hand, field investigations and various emergencies which have arisen, interrupting the routine work, have broadened the field of efficient service which the laboratory renders and have, furthermore, contributed greatly to the organization of the laboratory service of the state as a unit. The staff is scarcely adequate, and should be increased to meet all emergencies without interrrupting the work of other departments of the laboratory.

Branch Laboratory in New York City

During the year the Branch Laboratory in New York City, under the direction of Dr. Noble, has been brought into closer touch than hitherto with the central laboratory in Albany. For the past three years excessive labor turnover, a numerically inadequate staff and overcrowded rooms have made it impossible to maintain a satisfactory standard in the diagnostic work done in this branch. A new building, however, and an increase in the staff will not only go far toward remedying present conditions but will also provide facilities for study and research.

Water and Analytical Chemical Laboratories

An increased number of samples of water was examined during the year for health officers and for the Division of Sanitation, on account of the difficulties caused by limited rainfall. There is still need for more efficient operation of water sterilization and purification plants. By more frequent examinations and tests of the efficiency of these plants the laboratory can render distinct service.

The analytical chemists are called upon for an increasing number of special analyses, and, within the laboratory, for expert advice as to equipment and supplies in all branches of the work. Mr. Wachter has rendered valuable assistance to the Director by supervising all of the new construction and installation of equipment.

General Service Units

Of the general service departments, the office has approached most nearly its complete plan of organization, and is now in a position to study critically the suggestions made by the examiners of the Board of Estimate and Control.

The department for the preparation and sterilization of glassware and media has been completely reorganized during the year and substantial economies effected; unfortunately the working space is already overcrowded and the equipment far from complete.

Library and Scientific File No one thing has contributed more to the upbuilding of the laboratory than the establishment of the library and of the scientific file. Although working under the handicap of inadequate staff and an accumulation of incomplete work, this unit has during the past year been more effective than ever before. The scientific file has at last brought together all of the scientific investigations of the laboratory in available form for reference or publication, and is a record of very great value. Without the assistance of this unit, it would be impossible for the Director or the heads of departments to conduct the researches of the laboratory.

Research During 1921, progress has been made in nearly all of the research problems of the laboratory. Several noteworthy studies have been published; the results of others have been incorporated in the standard methods and their value is shown in the character of the routine work. The research activities of the staff as a whole — the study of practical problems in the improvement of the routine work — have been stimulated by the completion of the standard methods which have been under way since the reorganization of the laboratory in 1914. A clearer conception of scientific approach and of methods of study has generally developed and attention has been focused upon practical results. In consequence, many economies have been made possible and unnecessary work eliminated.

Special mention should be made of the discovery of the inhibitory action of bacterial culture products on phagocyting leucocytes in the course of the work of Miss Ella N. Hoppe; and, in that of Miss Ruth Vories, the observation that the leucocytes have apparently no action on the true toxins of the diphtheria and tetanus bacilli. The observations of Mr. Frank Maltaner and Miss Elizabeth Johnston on the phenomenon of conglutination, first reported by Bordet, are also important. The complement fixation test promises to be of great practical value as a diagnostic aid not only in cases of human tuberculosis but also in testing cattle. A brief report on the new methods which have been adopted for the purification and concentration of antigens for this test has been published.

Educational Activities The members of the staff have been encouraged to attend meetings, to visit other laboratories and to take advantage of every opportunity for broadening their culture and gaining new knowledge or points of view through contact with persons engaged in similar work. The worker derives great benefit and the state gains much in service. Members of the staff have assisted in twelve courses of instruction in public health and in the training of three persons sent us by the Federal Board for Vocational Training. One hundred and seventy visitors from sixteen states and twelve foreign countries have inspected the laboratory, several of whom have remained for periods of from two weeks to eight or nine months.

The critical survey instituted by Governor Miller and the Board of Estimate and Control has been of incalculable value to the Director and his staff. The examiners made a thorough and painstaking study with the sincere purpose of ascertaining the facts. It was a difficult undertaking for them and it was impossible to gather all the significant facts, but the conclusions were so conservative as to be helpful and stimulating to a further study by the staff of the questions suggested in the examiners' report.

Respectfully submitted
AUGUSTUS WADSWORTH
Director

ALBANY, *January* 23, 1922

Field Activities and Correlation With Other Divisions and Agencies

PAUL B. BROOKS, M. D., *Assistant Director*

The duties of the Assistant Director during 1921 have not differed materially in character from those mentioned in his report for 1920. In order to indicate progress in connection with activities referred to in that report, its sequences are continued here.

That the number of local laboratories is progressively increasing and standards improving is indicated by the fact that our records show ninety-four laboratories approved for public health work at the close of 1921, as compared with sixty-seven in 1920 and thirty-three in 1919.

During the year two new county laboratories have been approved and are in operation, while in three other counties boards of supervisors have voted to provide county service and have made appropriations more or less adequate for the purpose. In another county a laboratory which had not been approved for two years has been established in new quarters with new equipment and necessary help.

The last legislature incorporated in the Insanity Law a paragraph authorizing superintendents of state hospitals for the insane, having approved laboratories, to enter into contracts with counties or municipalities to furnish laboratory service.

St. Lawrence county, one of those referred to above, is the first to take advantage of this provision, having contracted for county service with the state hospital at Ogdensburg.

In the city of Utica a consolidation has been effected between the city and state hospital laboratories, which should react greatly to the advantage of service in the city, and which suggests the possibility of future provision for service for the entire county.

The board of health of one third class city maintaining a laboratory for milk work alone has voted to increase the scope of work done, but has been unable to find a competent bacteriologist at the salary provided. One third class city has contracted with an approved hospital laboratory for municipal service. A number of existing laboratories, some in large and progressive municipalities, have been working constantly at a disadvantage on account of inadequate appropriation. No opportunity has been lost to bring to the attention of local officials the economy, from a public health standpoint, of making adequate provision for laboratory service.

Late in the year the occurrence of outbreaks of infectious jaundice offered an unusual opportunity for investigation of the disease. Within a few days, in addition to the establishment of a state research unit in the central part of the state, it was possible to enlist the services of sixteen local laboratories situated at strategic points.

Following page 48 is shown a chart giving a list of local laboratories approved for public health work, and indicating the kinds of work for which each is approved.

At the close of 1921 there are two hundred and four laboratories registered in accordance with the requirements of chapter 411, Laws of 1917, as amended by chapter 269, Laws of 1921. All laboratories within the state engaged in handling or cultivating live pathogenic organisms are now required to register with the State Department of Health under this act.

Two hundred and one district laboratory supply stations have been established, covering the entire state outside of New York City. From the fact that relatively few complaints are received, it would appear that the district system is functioning satisfactorily from the standpoint of health officers and other physicians. Since many districts have but recently been organized, it is still too early to judge as to relative economy, as compared with the former system of distribution.

Some time ago the writer devised a compact box of diagnostic outfits, designed to be carried in the handbag of the practicing physician. Distribution of these has recently been begun and already many commendatory letters have been received.

Some progress has been made in the direction of promoting popular education regarding public health laboratory work and its value. An exhibit prepared for use in connection with the annual meeting of the American Public Health Association in New York City, was viewed by a large number of people. Stereopticon slides for popular lectures have been completed and are ready for use.

Weekly interdivisional conferences, at which the writer has presided, have been continued and have made possible a much more satisfactory coordination of the activities of different divisions than existed before they were undertaken.

The Assistant Director has been in charge of the undergraduate course in public health given to senior students of the Albany Medical College, and has assisted in connection with postgraduate courses given at Albany and at Syracuse. He has given lectures in connection with two nurses' training courses and with public health nurses' institutes held at Syracuse, New York, and Albany. Meetings have been attended and talks have been given on various other occasions.

As heretofore, the administrative activities of the Assistant Director, other than those already referred to, are left to be covered by other reports or by records in the files of the division.

The writer feels that he should not conclude without again referring to the valuable assistance in connection with important field activities and projects rendered by the staff of district sanitary supervisors. Without their active and cordial cooperation much that has been accomplished would have been impossible.

Antitoxin, Serum and Vaccine Laboratories

M. B. KIRKBRIDE

The distribution in 1921 of biologic and chemical products prepared by the State Laboratory has exceeded that of the preceding year. The larger demand is due primarily to the increased use of this service by physicians throughout the state although, in certain instances, there has undoubtedly been some overstocking by newly established district supply stations. This should be overcome, however, as a closer adjustment of supply to demand is effected. While increased production brought further pressure on the already overtaxed accommodations at the laboratory and farm, a numerically adequate staff has enormously facilitated the work and made possible changes and improvements hitherto impossible. More time has been available for experimental studies connected with production and these studies have given added interest and zest to the work as a whole.

Diphtheria and Tetanus Antitoxins, etc.

Approximately 294 million units of diphtheria antitoxin were distributed as compared to slightly more than 227 million units in 1920 while shipments of tetanus antitoxin increased from about fifty-four to over sixty-seven and a half million units during the same period.

Since it became necessary to increase more rapidly the production of these preparations, a part of the old laboratory building on Yates Street was again utilized for stable quarters. We were thus able during the year to make use of fourteen horses and mules transferred from the State Militia and we also obtained through the interest of Major Chandler nine State Constabulary horses. Other exceptionally good horses which were badly needed were available from the same sources, but advantage could not be taken of the opportunity to acquire them on account of the already overcrowded condition of the stables.

The average titre of horses bled for diphtheria antitoxic plasma, as shown by monthly trial bleedings, was 416 units per cc. Three animals exceeded 900 units per cc. The average unit concentration of the antitoxin distributed was 200 units higher than during the preceding year.

Procedures connected with concentration have been improved and simplified, resulting in considerable saving of time, labor and expense in production, as has the adoption of the intracutaneous method for certain tests of diphtheria antitoxic material.

The production of diphtheria and tetanus toxins for immunizing purposes maintained a uniformly high level, none of the routine lots falling below the required standard of toxicity.

Schick Test, Diphtheria Toxin-Antitoxin Mixture The distribution of outfits for the Schick test and diphtheria toxin-antitoxin mixture has increased 50 per cent and 78 per cent respectively. Most of these supplies were taken by Buffalo and Rochester. It is to be hoped that during 1922 more localities will avail themselves of this laboratory service for the active immunization of school children especially those in the primary and lower grades and in institutions.

The value of the Schick test depends upon the accuracy of the outfit and the ability of the physician to perform the test and to correctly interpret the reactions. Further experience confirms the policy of the laboratory in requiring that those obtaining the outfits should be thoroughly qualified to use them. Comparative tests made by Dr. Early have again demonstrated the exceptional accuracy of the outfit prepared and distributed by the State Laboratory.

Therapeutic Immune Serums The distribution of therapeutic serums has increased. Additional horses immunized during the year to a limited number of standard type strains of meningococcus have confirmed the previous findings that a more prompt and higher agglutinative response is obtained by this method than by the former in which fifty or more strains were used.

Bacterial Vaccines Approximately 2,300 more packages of typhoid-paratyphoid and of pertussis vaccine were distributed than in 1920, the increase being chiefly in the latter. There was some decrease in the typhoid vaccine sent out. In anticipation of the advisability of increasing the concentration of pertussis vaccine, special lots containing 4,000 instead of the usual 2,000 million bacilli per cc. have been prepared and sent out during the last two years. The higher concentration has now been adopted for routine production and general distribution will begin in January.

Diagnostic Immune Serums Monovalent agglutinative serums representative of the three main groups of B. dysenteriæ and of the meningococcus Types I, II and III, have been added to the list of diagnostic serums distributed to approved laboratories requesting them. The demand for the laboratory's surplus from laboratories in other states and foreign countries has continued. A large order has been placed by the Rockefeller Foundation for quarterly shipments of material to be used in China. The sales have approximated $2,700 which reverts to the State Treasury. The absence of a federal license still prevents the sale outside of New York State of surplus therapeutic products.

Arsphenamine Early in 1921 the manufacture of arsphenamine on a much larger scale was made possible by the installation of a larger still. The quality of the product also improved. During the first half of the year the amount of arsphenamine produced was thus greatly increased and further purchase of the drug became unnecessary. The equivalent of over fourteen thousand 0.6 grams of laboratory product was distributed between January and July.

After July when funds for carrying on the work were no longer available, the staff was reassigned and production discontinued. It has, however, so far been possible, from the supply on hand, to continue shipments of arsphenamine to localities where complete curtailment would have caused special hardship.

Much credit is due to Mr. Davis and Mr. Roelky and their assistants for the interest and enthusiasm shown in the work under particularly trying conditions at the Yates Street laboratory. Problems connected with chemotherapy will undoubtedly arise in the future. The presence of workers trained in these exceedingly difficult and complicated technical procedures is likely to prove an invaluable asset to the laboratory.

Bacterial Collection The usefulness of a small but comprehensive bacterial collection can hardly be overestimated. Besides acting as a distributing center for cultures, the group having charge of the collection should be prepared to undertake special studies on the identification of new or atypical strains referred to it; it should cooperate in investigations and otherwise assist the workers in this and other laboratories. Since January, when the collection was organized into a separate group in charge of Miss Ingalls, under the immediate supervision of Dr. Sperry, encouraging progress has been made along these lines. New cultures have been added and a careful study made of those already in the collection. The number of cultures distributed has doubled.

In line with these changes the work connected with sterility tests on all biologic products has been made into a sub-group which will be under the supervision of Miss Ingalls. During the year nearly twenty-nine thousand tubes and flasks inoculated with the biologic products were examined.

Farm The immediate supervision of all farm activities directed by Mr. Schadler has been placed under Dr. Griffin. An adequate staff since June, and funds available for the most urgent repairs, have greatly helped in improving conditions. The repairs have included painting the two tenants' houses, shingling, repairing the foundations of the barns, the building of an excellent fence around one of the horse pastures, the construction of a ditch for drainage purposes, grading of roads, etc. An encouraging beginning has thus been made although conditions under which the horses must be kept, bled and injected, remain exceedingly bad and the overcrowding is worse. The new construction that is imperatively needed was given in last year's report.

It became necessary to transfer most of the smaller laboratory animals to the old laboratory building on Yates Street. Here more systematic breeding and care of the animals can be undertaken. While some of the farm crops fell below last year's record owing to weather conditions, production as a whole was approximately the same. During 1920 the farm was able to supply for the first time practically all the green feed required for the smaller laboratory animals. Besides the injections and bleedings connected with production of antitoxins and immune serums, over 700 liters of serum for media were obtained and shipped to the laboratory.

Filling and Boxing of Products The work of the filling and boxing group indicates in a measure the increased output of the department. Approximately 141,000 bottles were filled and 132,000 individual packages prepared for distribution as compared to 103,000 and 93,000 respectively in 1920. Through the diligence of Miss Tegler and her assistants the additional work was accomplished without any increase in staff.

Staff, etc. Dr. Sperry, who was appointed January 1, 1921, has given valuable aid along various lines and is assuming responsibility for many details of administration.

A number of the workers have attended scientific meetings and visited laboratories elsewhere and this privilege has been much appreciated.

During the year there were approximately twenty-two new appointments or assignments to the department and twenty-seven resignations or transfers. The larger number of transfers is due to closing the arsphenamine work. The training of new assistants has retarded investigations in the scientific groups but the increases in the staff have now placed the department in a far better position to carry on the work satisfactorily than has ever been possible.

Duties as secretary-treasurer of the New York State Association of Public Health Laboratories have required considerable time but the contact with workers in other laboratories has been very stimulating and helpful. An abstract of papers and discussions at the meeting held at the State Laboratory in October was prepared for distribution to members of the association.

The routine methods for the department have been or are in process of being rewritten.

Special Studies and Investigations Among the studies completed or in progress the following may be mentioned:

A method for determining by means of the intracutaneous test varying amounts of diphtheria antitoxin present in horse serum, plasma and antitoxin has been developed by Miss Leddon. This method — adequately controlled by the subcutaneous method — is now used for testing all trial bleedings, samples of plasma and experimental fractions and, in certain instances, as a preliminary test on antitoxin. Approximately one-fifth the number of guinea pigs required by the subcutaneous method are used, and all the animals are later available for other purposes.

Eighteen mules belonging to the State Militia were tested for natural antitoxic substance and the results were compared with those of tests on an equal number of horses. The average content was found to be approximately the same. Of the six mules immunized against diphtheria toxin, the serum of all reached a titre above 500 units per cc., two going above 1100 and 1250 units (the highest dilution tested).

Studies have been made by Mr. Wood along different lines connected with the concentration of antitoxins. The work is still in progress but already valuable data have been obtained and certain procedures adopted which have improved and simplified production. The addition of Mr. Murdick to this group in July was of great assistance and has made it possible to push forward investigations long delayed on account of lack of competent assistance.

A comparison was made by Dr. Sperry and Miss Hutton of the actual number of bacilli per cc. in samples of typhoid and paratyphoid vaccines prepared by a federal, a city and a state laboratory. The haemocytometer was used for counting. The vaccines from two of the laboratories showed a much higher concentration than was given on the labels. A further comparison was made by testing the agglutinating titre of serums from rabbits immunized against two of the vaccines, using two methods of immunization for each vaccine. The average titre of the serums from rabbits receiving the vaccine with the highest or the lowest count was approximately the same whichever method was used.

An initial stuy by Miss Hutton of the agglutinative titre of serums from horses immunized against a varying number of strains of the meningococcus has been completed but further tests will be required at stated intervals.

The value for the maintenance of stock cultures of a nutrient gelatin medium described by M. Cobb Worth has been tried for about sixty selected strains by Miss Ingalls. The results to date indicate that the medium will be unusually satisfactory for this purpose.

In conjunction with the preparation of arsphenamine in charge of Mr. Davis a long series of special studies was made on the laboratory product. These included procedures to determine the effect of reactions on toxicity by variations in the amount of alkali added, temperature of the diluent, period of standing before and after alkalinization, etc. A parallel study was made of the hydrogen ion concentration of the solutions.

With a view to its practical application to the Schick test, a study is being made by Miss Dow of the rate of deterioration of diphtheria toxins under different conditions. The work is still in progress.

A number of samples of catgut made by three manufacturers were received from two hospitals for examination. Several of the samples were contaminated.

No summary of the year's activities would be complete without mention of the aid obtained from the library. The library unit as a whole is indispensable to the further development of the work in this department.

Report of the Diagnostic Laboratories

RUTH GILBERT

The activities of the Diagnostic Laboratories have been specially varied and fruitful during the past year. The organization has been improved, standard methods further revised, the scope enlarged, and progress on the task of inspecting and standardizing laboratory work throughout the state has been made; also outside emergency calls have been met. The volume of regular work accomplished has been maintained, and even increased in the case of certain examinations. The increase was most noticeable in the number of throat cultures examined for diphtheria bacilli.

The amount of literature which has been reviewed and of investigation that has been carried on during the year is remarkable in view of the fact that the routine has been heavy and that at different times a number of our workers have been called upon to serve in emergency cases away from the laboratory. All of the research work was undertaken with the purpose of solving actual problems that are met with in our daily work or of improving details of procedure. Not only, however, have the results been of use in our own laboratory, leading to improved standard methods with economy of time and material, but the workers in some cases have been able to formulate these results in order to present them before audiences and to publish them in scientific journals.

Several changes and additions have been made in the routine:

Flagella Stain

Schunk's modification of Loeffler's flagella stain is now being used in all examinations where there is doubt concerning the motility of the cultures.

Endo's Medium

Robinson and Rettger's modification of Endo's medium has been adopted as more satisfactory than Kendall's modification for use in the isolation of organisms of the enteric disease group.

Diagnosis of Chancroid

The method recommended by Teague and Deibert for cultural examinations in the laboratory diagnosis of chancroid has been learned by our workers.

Wassermann Reaction

In the serological diagnosis for syphilis, a fifteen minute period of incubation for the titrations made in the standardization of the hemolytic system has been adopted; and a four-hour period for fixation in the ice box has been adopted for the tests with the cholesterinized antigens. In cases where a doubtful reaction is obtained or where the results of the test do not agree with the clinical findings, results by the ice box method are checked by supplementary tests with a half-hour period of fixation in the water bath at 37° C.

Production of Amboceptor from Mules

Amboceptor for use in the complement fixation test for syphilis has been produced in a mule. A large amount has been prepared using this animal, thus saving the time spent in the immunization of rabbits for the production of amboceptor. As a result of tests which have been made, glycerine is shown to be an effective preservative for amboceptor. All amboceptor is now preserved with 50 per cent glycerine.

Globulin Test Noguchi's picric acid test for globulin in specimens of spinal fluid is being used to confirm the results obtained with the butyric acid test.

Typhus Fever and Infectious Jaundice We are now prepared to make the Weil-Felix agglutination test for typhus fever and to make tests for the Pfeiffer phenomenon with *Leptospira icterohaemorrhagiae* on specimens of blood from suspected cases of epidemic jaundice.

Pneumococcus Type Differentiation The pneumococcus type differentiation has been transferred to our department. Type I pneumococci have been isolated from 21.9 per cent of the specimens examined.

A special effort has been made during the year to secure more satisfactory data with specimens submitted for examination and to have the specimens labeled more carefully. Physicians throughout the state have cooperated well in this matter.

A container for larger specimens of blood for the agglutination test for typhoid has been adopted. We hope with this container to have more satisfactory specimens submitted for examination.

Arrangements are being made to have tubes containing the Loeffler's medium for throat cultures corked. This means should prevent drying for a longer period than the method of sealing now in use.

Apparatus has been purchased for blood chemical tests.

Unusual Specimens Received During the year the laboratory has been called upon to examine specimens from a number of interesting cases. A specimen of spinal fluid was received which gave complete fixation with both anigens used in the complement fixation test for syphilis. A guinea pig inoculated with some of the fluid developed typical tuberculosis. The patient died four days after the specimen was taken. The clinical diagnosis was lethargic encephalitis.

Several gall bladders were sent to the laboratory to be examined for typhoid bacilli. In most cases those found positive contained gall stones. With one exception, the appendix from each case was also sent. In one of these, apparently normal until cut into, a common pin, black from corrosion, was found. Fecal specimens from three of the cases contained typhoid bacilli after the gall bladders had been removed, but only one after several months continues to be positive.

Following a case of diphtheria which occurred among the workers, throat cultures were made from 168 members of the staff. Morphologically typical diphtheria bacilli were found in the cultures from seven of the contacts. Six of these cultures gave the sugar reactions of diphtheria bacilli — all seven proved non-virulent for guinea pigs.

A specimen of discharge from an ear contained diphtheria bacilli. Diphtheroids are so often isolated from this source that the isolation of virulent diphtheria bacilli is of special interest.

In several instances organisms having the typical morphology of diphtheria bacilli in young cultures have been isolated from throat cultures which on longer incubation have coccoid morphology. These cultures have given the sugar reactions of diphtheria bacilli, but produced lesions in animals different from those produced by diphtheria bacilli.

Emergency Calls

During 1921 there have been fewer calls for workers to help those in charge of out-of-town laboratories or to organize a temporary laboratory in connection with emergency conditions. Yet seven members of the diagnostic department helped in two consultation clinics held at Brewster and Jamestown. Workers were sent out in response to emergency calls from Amsterdam, Auburn, Belmont, Geneseo and Olean. On two occasions there was shortage in the staff, and at the other three laboratories assistance was needed to help with the routine work.

Work of Inspecting and Standardizing the Work of Laboratories in the State

The work of inspecting laboratories throughout the state has progressed most encouragingly. Eighty-four laboratories have been visited by members of our department during the year. Valuable data have been gathered and tabulated which will serve as a basis for comparison between the different laboratories. Ninety-four laboratories have been approved. This number is an increase of twenty-seven over that of last year. In general, the directors of these laboratories have cooperated cordially with the State Laboratory in the efforts to standardize the laboratory service throughout the state.

The New York State Association of Public Health Laboratories met during October for an all day session at the laboratory. Enthusiasm was aroused by the papers which were read and the discussions which followed. Five members of the diagnostic staff presented phases of their work. It is planned for future meetings that the diagnostic groups will demonstrate unusual or only slightly familiar technique, and arrange to show interesting slides, smears or other material to the visiting laboratory workers.

Visitors to the Laboratory

During the year twenty persons interested in laboratory work have visited the diagnostic department to inspect the equipment and work — several came from other states or other countries. Visitors who wished to become thoroughly familiar with the methods in use here have remained anywhere from a few days to several weeks or even months.

Investigation and Research

An unusual amount of investigation has been carried on in connection with the daily routine, and the knowledge gained has been applied whenever required to increase the effectiveness of the work in the diagnostic department.

The following papers have been presented by members of the diagnostic department: A comparative study of diagnoses made in various laboratories in New York State; a comparison of the value of 0.6 per cent and 6 per cent salt solution in the glycerine outfits for submitting feces; occasional irregularities in routine virulence tests; lesions resembling tubercles noted in guinea pigs in which no acid-fast bacilli were found; a comparison of icebox fixation with water bath fixation for complement fixation tests with cholesterinized antigen; the use of a 15-minute titration period for the standardization of the hemolytic system in complement fixation tests; a brief study of the influence of bacterial growth on the globulin content in spinal fluids; the relative efficiency of various differential media for the isolation of organisms of the enteric disease group; the use of sterilized cultures for typhoid agglutination tests.

Several additional pieces of investigation now in progress may be mentioned. The frequency of positive agglutination tests on specimens of blood from typhoid and paratyphoid carriers has been studied. We have been interested in noting that the agglutination test has been negative in some cases that have been definitely proven to be carriers.

Cultural work is being done in the hope of obtaining a more satisfactory method for the isolation of gonococci from discharges.

Tests are being made to determine the value of absorbing natural anti-sheep amboceptor from specimens of serum submitted for the complement fixation test for syphilis. A classification of specimens received for this test relative to the source is being kept for the purpose of ascertaining the prevalence of syphilis in different social groups. The results of the tests are also being studied in relation to the clinical histories supplied with a view of determining the accuracy of the complement fixation test in the diagnosis of syphilis.

In considering the reasons why the work of the diagnostic laboratories has, on the whole, been satisfactory, the principal one perhaps is that the per cent of so-called " labor turnover " has been much less during the past year than ever before. No matter how well fitted or experienced workers may be when they enter the laboratory, their first year is largely one of adjustment for most of them. Especially in the case of workers well prepared to be trained, it takes several years before they reach a high degree of usefulness. During 1921 there has been relatively some stability in the personnel of the diagnostic staff, and this fact has enabled us to accomplish a large volume of work.

The library staff and those in charge of the scientific file have been of assistance in connection with our investigations by securing references and criticizing papers that have been prepared for publication.

The opportunity for a number of the workers to visit other laboratories and to meet experts in the line of public health activities has been a great stimulus. Whenever possible, members of the staff are encouraged to take part and to present papers before scientific societies. Several persons from the diagnostic groups have taken advantage of the privilege and have visited other institutions and have attended meetings. The personnel of the various groups is excellent, and we look forward during the coming year to increasing still further the diagnostic service of the State Division of Laboratories.

The Branch Laboratory

WILLIS C. NOBLE

Although located in New York City, the Branch Laboratory does not serve the city; its district comprises the counties of Orange, Rockland, Westchester, Nassau and Suffolk.

Volume of Work

The number of specimens examined shows an increase of nearly 7 per cent over that for the year 1920 (20,134 to 21,477). The total number of tests, however, has fallen from 40,530 for 1920 to 34,194, due chiefly to a change in the method of performing the complement fixation test. An increase of 25 per cent in the number of virulence tests of diphtheria bacilli indicates a growing appreciation on the part of physicians of the significance and value of the test. Although there has been a slight decrease in the number of specimens submitted for the complement fixation test for syphilis (8892 to 8764), the number for 1921 signifies an increase in the service rendered by the Branch Laboratory for a large proportion of the specimens submitted during 1920 were due to the activity of the Division of Venereal Diseases of the State Department.

Public Health Instruction

During the past year the staff has assisted in the instruction of six different classes for health officers, held under the auspices of the University and Bellevue Hospital Medical College, and in the Institute for Public Health Nurses held last June. The assistance given by Miss Thomas and Miss Knacke in this work beyond their regular duties deserves especial mention.

Experimental Work

Miss Kelley has continued her experimental work on the precipitin reaction in the diagnosis of gonorrhea. She began this work more than a year ago, before she joined the Branch Laboratory staff, upon a grant to the University and Bellevue Hospital Medical College by the Interdepartmental Social Hygiene Board.

Changes in the Staff

There has been a labor turnover during the year of 73 per cent, due in part to a desire of some of the workers to pursue advanced courses in university graduate schools; in part to inadequate salaries, especially in the lower grades; to an inadequate staff in general for the amount of work being carried on in the laboratory; and finally to inadequate quarters and laboratory facilities. In February and March, the salary situation became critical. Laboratory apprentices and assistants, junior grade, were receiving $70 and $75 a month, respectively, while outside institutions were offering from $100 to $125 a month for workers of the same grade. In consequence a number of workers were lost, the Wasserman group suffering especially. By the grant of supplementary salaries from the Interdepartmental Social Hygiene Fund, and through the generosity of Dr. Park, who paid other supplementary salaries for a few months, the situation was saved until the new budget became available on July first. Such frequent and numerous changes in the staff necessarily resulted in diminished working efficiency and an exceedingly heavy burden for the few experienced workers remaining, some of whom became ill under the strain. It is confidently hoped that in the coming year conditions will be more favorable and apparently much has already been accomplished in this respect; the salary situation has been remedied in part, but the minimum salary of $75 a month is still below actual living costs and below salaries now paid by hospital, private and medical school laboratories in the city. The addition of six workers to the former staff of eleven, which was made in September and October, has aided through allowing more time for the interpretation of results, for the study of problems arising in the work, and for study and reading by the workers; the new laboratory with its additional space, so sorely needed, will make conditions livable for the staff and will permit of better and more efficient organization. The present staff is the strongest in capable and experienced workers which the Branch Laboratory has ever had.

Detail of Workers to the Central Laboratory

In September and October, three workers were detailed for tours of duty of about two weeks at the Central laboratory. These were most profitable to them, and have aided in bringing about closer cooperation between the workers of the two laboratories. It is, however, unfortunate that expenses, except for traveling and one day at Albany, must be borne by the worker.

New Laboratory Building

By far the event of greatest moment during the year has been the erection of a new laboratory building. In July work was begun by the University and Bellevue Hospital Medical College, at 339 East 25th Street, on a new wing of the college building, to be seven stories high and to be used entirely for public health work. Two stories will be given to class rooms, and five stories — approximately 6,000 square feet of available floor space — will be given to the Branch Laboratory. Great progress has been made on the building, and it is hoped that we shall be able to occupy it shortly after March first. The added space will go far toward rectifying the unfavorable conditions under which the work has been done for the past three years, and which have been mentioned above. It is hoped and expected that the new laboratory will be ideal in every way. It is planned to have a thoroughly modern cleaning and media room, a roomy and well arranged serological laboratory, sterile rooms for cultural work in the bacteriological laboratory, a chemical laboratory, an office and a library. Provision is also made for two rooms for research work. The expansion of the office will contribute much to the efficiency of the entire laboratory. The chemical laboratory will provide facilities for work which up to the present it has been impossible to carry on in the Branch Laboratory. The research rooms will offer an opportunity for the study of special problems, and the library especially will be of great assistance in training and maintaining an efficient and contented staff.

Water and Analytical Chemical Laboratories

LEONARD M. WACHTER

The limited amount of rainfall during the greater part of the year 1921 created acute difficulties for many of the public and private water supplies throughout the state. This condition was reflected at the laboratory in the increased number of water examinations made during the year at the request of health officers as well as for the Division of Sanitary Engineering, now the Division of Sanitation.

There still exists the necessity of more efficient purification of public water supplies in certain municipalities. Placing too great reliance on sterilization alone to safeguard public water supplies would seem to be a recent tendency in many instances, instead of using sterilization as a final safety factor. These conditions make it all the more necessary that the sterilization plants be efficient installations and efficiently operated at all times. The importance of water sterilization justifies the discussion of this subject even though it has been mentioned in previous reports of the laboratory and we wish again to state that the laboratory is able to cooperate with the Division of Sanitation and the health officers by more frequent examinations of water from supplies receiving such treatment and thus aid in efforts to maintain the highest efficiency of water sterilization processes.

Special Chemical Examinations

The analysts of the water laboratory were called upon to make a large number of analyses during the year in connection with the production of arsphenamine. The work included the assaying of the raw materials and the analyzing of the intermediates and the finished products. This work represented the largest part of the special chemical examinations that were made.

A number of trade wastes were examined for the Division of Sanitation in a cooperative study of the cause of tastes and odors in connection with the water supply of Waterloo.

Chemical examinations supplementing the bacteriological work done by the diagnostic laboratory were made in a study of a large number of cases of acute illness with rapid onset that occurred among the patrons of a factory restaurant at Binghamton.

A large number of toy balloons were examined in an effort to determine, if possible, the cause of the skin irritation that affected a number of school children at Fonda who had played with toy balloons after they were broken. The cause of the trouble was not definitely determined.

Equipment and Construction

The head of the water laboratory has devoted a large amount of time to assisting the Director with the development and installation of the larger apparatus and equipment in the laboratory and in the general supervision of laboratory employees in obtaining a semblance of order on the grounds by grading and by starting service roads around the building. Considerable supervision has also been needed in the completion of the interior of the stable units by laboratory workmen and in their equipment.

Luncheon Room

During the year two large, well-lighted and somewhat isolated rooms have been assigned to the luncheon room, thus making the service more satisfactory. As in previous years, luncheons have been served for thirty-five cents, and for those who bring their own lunches, supplementary dishes have been provided at nominal cost. This service has been rendered, and a small balance maintained, in spite of continued high costs, high labor turnover, and the fluctuation in attendance which has been caused by the absence of workers at meetings and on field investigations.

Executive and Secretarial Offices

I. M. DUTTON

The progress which the various secretarial units of the office have made toward better organization has been conspicuously aided by the lower labor turnover in the laboratory during the year. This was reduced from 61 per cent in 1920 to 28 per cent in 1921. Also, the office staff of the Branch Laboratory in New York City is in a more satisfactory condition this year than it has been at any time previously. With the installation of new equipment and the addition to the staff of a worker trained in the office of the main laboratory the development planned in 1920 is progressing encouragingly.

Our plans for future development were greatly stimulated by the thorough and keen but sympathetic investigation of our present standard procedures by the Board of Estimate and Control appointed by Governor Miller to review the operations of all the state departments. This investigation and the fact that members of the staff have been permitted to visit other laboratories and to attend scientific and commercial gatherings in the state where the best standard methods have been discussed and equipment displayed, have tended to make the office staff and its plan of organization of greater value not only to the workers within the laboratory but to those who have visited it or been interested in knowing how it operated in conjunction with the individual laboratories and the other divisions of the health department. Inquiries of various kinds from several of the United States have been answered as well as those from foreign countries — Czecho-Slovakia, India, Brazil. One hundred and seventy visitors from India, Canada, Serbia, Czecho-Slovakia, England, France, Philippine Islands, Norway, Switzerland, Japan, China, Brazil, and from sixteen of the United States have inspected the laboratory and several have spent a period varying from two weeks to eight or nine months in studying the standard procedures in detail. The Federal Board for Vocational Training has already assigned three ex-service people to this laboratory for training.

The growth of the work of the laboratory has made it necessary to use storage space for workrooms and the problem of storing reserve stocks of laboratory equipment and supplies in a satisfactory and convenient manner is each year becoming a greater one. We look to the approval of requests for new construction to relieve this condition.

Preparation and Sterilization of Glassware and Media

ELEANOR M. HUMPHREYS

The past year has been a period of adjustment and organization. Little new apparatus has been secured, and the equipment has been increased only by the building of necessary shelves and of a cabinet for the storage of materials. We have been occupied with the revision of procedures, with the aim of making the best use of the equipment at our disposal.

Sterilization

In January the old gas autoclaves were removed and the practice of having contaminated material collected and sterilized by a member of the night staff was discontinued. All work of sterilization is now performed during the day by members of the staff.

The two "American" sterilizers are now equipped with vapor-tension capillary thermometers, a type which is more satisfactory than mercury instruments for use when dry heat at high temperatures is employed for sterilization.

Glassware Preparation

The work of the glassware group has been very heavy. With the reduced staff we have had difficulty in taking care of the increased volume of work during the past months. However, by means of cooperation among all groups of the department, we have succeeded in meeting all demands.

During the year we have adopted the use of ½, 1 and 2 gallon green glass bottles, in place of the large flint glass bottles previously used to contain plasma, serum, etc. These are much less expensive than flint glass bottles and have proved very satisfactory.

We now have little difficulty in supplying satisfactory glassware to other departments. We met one problem this year in which it was necessary to employ a special grade of cotton in stoppering tubes. The ordinary grades were found to contain too much oil and a high grade absorbent cotton had to be used for this work.

Boxing of Diagnostic Outfits

The boxing group has suffered from the same handicap as the glassware group, since in the present organization the work of these two groups is largely performed by assistants who divide their time between glassware preparation and boxing work. This group has been especially busy during the fall, due to the unusually heavy demand for diphtheria outfits and culture tubes. In addition this group has been devoting all the time possible to the preparation of handbag outfits for distribution to physicians.

During the early part of the year the boxing group was able to spend some time salvaging dull and used needles. A considerable saving was effected.

As to volume of work, there has been a moderate increase in the total number of outfits assembled during 1921 over those prepared in 1920, and a decided increase in the number of diphtheria culture tubes without mailing cases. (In 1920, total outfits, 195,438; diphtheria culture tubes, 45,808. In 1921, total outfits, 233,574; diphtheria culture tubes, 76,790.) Among complete outfits, there has been a moderate or slight increase in the number of all outfits assembled excepting sputum outfits for the diagnosis of tuberculosis. In addition there was a marked decrease in the number of venereal disease blood outfits (without outer containers) prepared for use in state institutions.

Two new outfits have been added to the number of those assembled, in addition to the handbag outfit mentioned above. The first is an enteric disease blood outfit, to be employed as an alternative to the slides used in securing specimens for the Widal test. The other is a Keidel tube containing broth, to be employed in securing blood cultures. One point to be mentioned with regard to the assembling of handbag outfits is that each one completed involves the preparation of seven individual outfits.

Media Preparation

The media group has been especially busy during the fall months, keeping pace with the demand for Loeffler's medium for use in the diagnosis of diphtheria. An unusual quantity of this material has been prepared recently. We have experimented with various methods of heating, and have been fairly successful in producing a uniformly satisfactory material. However, we have one important problem to solve in connection with the preparation of this medium. We must find a method of keeping it from drying which will be more satisfactory than the process of sealing with paraffin which we now employ.

During the year we have revised our formulae for the preparation of media. In addition, wherever possible, we now adjust the reaction of media by the colorimetric method of determining the concentration of hydrogen ions. We have worked in conjunction with other departments on a study of methods and in consequence certain procedures have been revised. We have been able to produce much more satisfactory products, especially in the case of broth for testing sterility, of a modified Endo's medium for enteric disease work, and of a dextrose serum agar plating medium for use in testing the virulence of diphtheria-like organisms.

As far as total figures indicate, there has been a slight decrease in the volume of medium and solutions prepared during 1921. However, there is one fact which deserves emphasis. The decrease has been in the group of routine, heat-sterilized media, while there has been a marked increase in the amount of media combined with precautions to insure sterility.

Miscellaneous The work of the year has been accomplished with a decided decrease in staff. Since October first we have had one less worker in the sterilization group. The glassware boxing group has lost eight workers since July first, with three replacements. The permanent media group lost two workers, with one replacement. This makes a net decrease of seven workers in the permanent staff. The loss in the media group has been more than made up, however, by the assistance rendered by three federal students.

Fewer workers than usual have come to the department for brief periods of observation and training.

In conclusion, I wish to express my appreciation of the way in which the other departments have cooperated with us in our special problems. Further, I wish to commend the facilities of the library and scientific file and the excellent service rendered by the library staff.

Library

MARY WILLIAMS

If space permitted much might well be said in regard to the development of the library during the past year. With an adequate staff, sufficient resources as regards literature and all necessary equipment, the library affords free access to the more important literature upon the scientific subjects of interest and value to the laboratory, and supplies needed assistance in looking up references and in preparing manuscript for publication. The library is not only the center toward which all scientific workers turn for stimulus and information in connection with their work, but more and more the advantages it supplies are appreciated by the workers. It is gratifying to notice improvement in the reports and papers prepared by the members of the staff, which in turn indicate the amount of investigation and study going on in the laboratory, and to be able to report increased ability on the part of the library assistants to conserve time and effort in their work while rendering better service.

As the Director has emphasized in previous reports, his idea in regard to the establishment and development of a laboratory library is not merely to have a collection of books and journals, or even to limit the library activities to those usually included under the phrase " library work "; he wishes to consider the library as a point of concentration around which the research and investigation of the laboratory shall gather. Consequently, many related activities are included which are usually performed elsewhere, and the scope of the library work is continually expanding to keep pace with the continued development of the laboratory.

The unit or group is called the " library group " because library methods of classification, indexing and so forth are used in caring for the various kinds of material, such as books, pamphlets, lantern slides and museum material, and also for the arrangement and indexing of typewritten and manuscript reports and papers preserved in a permanent scientific file. This file which forms part of the library collection serves as the archives, as it were, of the laboratory activities.

As at present organized, the first duty of the librarian is to acquire, preserve and bring to the notice of workers literature bearing on laboratory activities, and to see that in arrangement and appearance the library room is really the center where scholarly reading and study are encouraged. On the other hand, it is the duty of certain members of the library group to help members of the staff to prepare the results of scientific work in the form of memoranda and reports which are suitable for preservation in the library or for publication. Also it is the duty of one person to notice, not merely if the material is handed in promptly, but to call attention if the reports themselves do not fulfill the purpose for which they are requested. They should not be long; should not require much time to write; but should be clear, concise and to the point, showing that even the junior workers are thinking about and studying their work.

The centralization of library activities, some of which might well be termed secretarial, has necessitated a larger library staff than would otherwise be necessary; yet when the character of the work is considered and it is realized that the different parts are dependent one upon the other, the arrangement is seen to be more economical and satisfactory than if two or more groups were organized separately. Many of the problems of the State Laboratory are also problems of the local laboratories or are of special interest to them, so that the laboratory library with its complete files of standard procedures, and full reports of special investigations and researches, reviews of literature and so forth, may serve not only the State Laboratory, but also other public health laboratories throughout the state.

The brief survey of the library activities made by the committee appointed by Governor Miller has stimulated the library group to continued study of their problems. During the past year the routine work has been under constant discussion and has become well systematized.

Although the library is primarily intended for the use of the scientific workers, particularly to increase interest in their work and to encourage them to study their problems, it is also intended to be of value to all the laboratory workers. Items of scientific interest, notices of meetings other than those connected with the laboratory are posted on the bulletin boards.

At present the library takes about seventy-five periodicals of interest and value to the laboratory staff, including representative foreign journals in bacteriology, pathology and experimental medicine. All these journals are necessary in such a large public health laboratory where a variety of subjects are under investigation, and where scientific workers should be informed of the latest results in bacteriology, chemistry and the other medical sciences as they are related to infection and immunity and to the field of public health. The current numbers of these journals, together with the bound volumes of back numbers and all other literature are kept easily accessible in the large library room. The books do not circulate. After some discussion it was decided to keep all literature in the library. As the room is always open and may be used at all times the regulation is reasonable and it works advantageously rather than otherwise in the interests of the research workers.

The degree of improvement in effective service made by the library during the past year, and the hopeful outlook of being able not only to stimulate intellectual activity among the laboratory staff, but to help foreshadow the direction in which some of such activity may be formulated, has been possible because the Director has insisted upon having, as far as possible, experienced persons for the work. The library group of the laboratory starts the coming year in better position than ever before to serve the needs of the scientific staff.

Abstracts of Reports From Local Laboratories

BUFFALO CITY LABORATORY

DR. THOMAS B. CARPENTER, *Superintendent of Laboratories*

(From Report to the City Health Officer)

The total number of examinations made has remained practically the same for the past three years (99,257 for 1921). A decrease in the incidence of diphtheria has resulted in a decrease of 25 per cent in the number of cultures examined, but there has been an increase of 21 per cent in the number of examinations for evidence of venereal diseases. "The figures show a healthy increase in the work performed, and all this under rather adverse circumstances."

"We have no clerical help, thus rendering it necessary to detail for this purpose technicians from the laboratory, and disinfectors. With the immense amount of detailed report work necessary to get out each day, it can be readily understood that difficulties must necessarily be encountered in utilizing untrained clerks for this work. I also beg to report that the State Department of Health, under whose approval we carry on our work, has severely criticized this lack of clerical help, and also criticizes the necessity for hurrying along the great amount of work done, with an insufficient personnel. It is due to the great industry and faithfulness of the laboratory workers that it has been possible to accomplish so much, under circumstances which should not exist."

CITY OF KINGSTON LABORATORY

B. ELEANOR EASTON, *Bacteriologist*

"The work has been the usual routine which has about equaled in volume that of 1920. It is interesting to note, however, that the public health work of the county has practically doubled during the past year. This is attributed to the establishment of a district laboratory supply station. Through the distribution of outfits we have become acquainted with the Health Officers of the county, many of whom have visited our laboratory, and with many of the other physicians. I believe the establishment of such supply stations to be a very effective means of bringing the physicians into closer touch with the local laboratory to the advantage of both the physician and laboratory worker."

ROCHESTER CITY LABORATORY

DR. G. W. GOLER, *Director*

Besides the routine public health examinations during the summer various soft drinks, wells at summer resorts and water on lake steamers were tested. About 50 per cent of these contained members of the colon group in either 1 cc. or 10 cc. quantities.

During the very hot weather counts were made on water from Lake Ontario taken at various points on the bathing beaches. These counts varied from 300 to 1,000,000 per cc., the average being about 2,000. The beaches were at no time considered unsafe for bathing.

SYRACUSE CITY LABORATORY

DR. A. G. GIGGER, *Bacteriologist*

Dr. Gigger's résumé is given in substance:

"During the recent epidemic of typhoid fever we had from various physicians a total of twenty-four blood cultures. Of this number sixteen were positive, four negative. Subsequent Widals on some also proved positive. It is interesting to note that while all were suspects only the sixteen which were positive developed typhoid fever.

"One interesting case in which a positive blood culture was obtained was that of Mrs. G. One son had typhoid fever and she took care of him. She was inoculated by her physician against typhoid and paratyphoid. In spite of this she developed the disease which ran a typical course with recovery. This case was one of several where typhoid fever developed before the inoculation had a chance to develop an immunity.

"In view of these facts it would seem that physicians should avail themselves of blood cultures as a routine in obscure conditions.

"Another source of gratification is the cooperation of the school nurses of the Department of Education in keeping watch of school children with sore throats, discharging noses, etc. They have conscientiously cultured these and many were positive. They have recultured also children returning to school from an attack of diphtheria.

"When children have been taken out of school on account of diphtheria, the nurses have cultured the other scholars in the room. This required considerable time as in some cases there were large classes in the room. Many times the nurses have sent in as many as eighty or one hundred cultures a day."

MADISON COUNTY LABORATORY

DR. R. L. CROCKETT, *Director*

"On November 1, 1921, the Madison County Laboratory was moved from the Devereux Block, Oneida, N. Y., to rooms at the Broad Street Hospital and the services of a technician secured to assist in the work. It is expected that, by this change, the work will be much facilitated and improved service will result.

"Owing to the prevalence of diphtheria in this section for the past two months the volume of work has increased considerably, over 500 throat cultures having been examined during November and December, 1921."

SARATOGA COUNTY LABORATORY

ADA L. BAILEY, *Bacteriologist*

This laboratory was installed in the Saratoga Hospital in August, 1920, by Miss Janet Bourn and was taken over by the county in April, 1921. Since Miss Bourn's resignation, July first, Miss Ada L. Bailey, formerly of the State Laboratory, has had charge of the work.

November first the city appropriated $500 to pay an assistant.

The variety of examinations made is steadily increasing, more physicians are using the laboratory and interest seems to be developing.

CRAIG COLONY LABORATORY

DR. W. T. SHANAHAN, *Medical Superintendent*

The résumé submitted by Dr. Shanahan seems especially interesting and is quoted:

"A considerable number of spinal fluids from selected patients has been carefully examined without finding any significant abnormality by ordinary methods.

"Haematological pictures in the endocrine glands have been carefully studied as the opportunity has presented itself. The results have been particularly consistent and striking in hypopituitarism. Briefly they may be summarized as follows: Frank and clear cut cases showed distinct eosinophilia approximating 20 per cent in some of the more exaggerated cases. Border line cases and cases receiving organotherapy showed unusually high and persistent mononucleaosis (pathological excess in the proportion of lymphocytes and endotheliocytes). All cases showed a polymorphonuclear leucocytosis which we are inclined to discount because of the fact that practically all cases had bad teeth. The most significant finding, we consider, is the mononucleosis which is helpful in the diagnosis of suspected border line cases which have a tendency to linger for an appreciable period after the inauguration of hormone therapy; while the eosinophilia, although interesting, is manifested most clearly only in those frank cases of pituitary dysfunction where lack of endocrine balance is quite distinctly suggested by other clinical symptoms.

"A moderate amount of biochemical research has been carried on during the year. It is disappointing to note that, so far at least, our analysis of the various constituents of the blood has provided only disappointingly negative data.

"It is intended to continue our blood chemical analysis and also to apply some of those delicate microchemical reactions to the future study of cerebrospinal fluids. Further an increase in the scope of our bacteriological work has been made possible by recent receipt of a much needed Arnold steam sterilizer.

"The cooperation of the Division of Laboratories and Research of the State Department of Health has been much appreciated and the plans formulated for the coming year anticipate a continuance of this pleasant and helpful relation."

UTICA STATE HOSPITAL LABORATORY

DR. C. L. RUSSELL, *Director*

The work of this laboratory consists largely of post-mortem examinations, fifty-one having been done during the past year.

Sections of the brain and of the endocrine glands were studied in all cases, and sections of such internal organs as showed pathological changes.

From these sections, 592 preparations were stained and studied for microscopical changes.

The number of clinical laboratory examinations has slowly but gradually increased, the total for the year being 793.

ST. MARK'S CLINICAL X-RAY LABORATORIES

DR. BYRON C. DARLING, *Director*

The laboratory service has shown steady growth since its establishment in March, 1920. During 1920 the average monthly increase in number of specimens was 41; in 1921, 118, while the increase for the year was 171 per cent (2,271 to 6,155). "In order to bring out the full value of the laboratory for the patient, a change was made early in January, 1921, from a fee basis for each examination to a graded lump sum laboratory fee for all routine work, with an individual fee for only such special examinations as blood chemistry, salvarsanized serum, vaccines, colloidal gold, etc." An increase in staff has also been made so that instead of three workers, only one of whom devoted full time, there are now four, three of whom give full time to the laboratory work.

"The development of a laboratory service which will prove attractive to physicians for their private work is expected to be one of the main points of growth during the coming year."

VON WEDEL LABORATORIES

DR. H. VON WEDEL, *Director*

There has been a marked increase in the volume of work, especially in the number of specimens for blood chemical tests. Dr. von Wedel is contemplating installing another laboratory in New Rochelle as the physicians realize more and more the value of laboratory work.

PAPERS PRESENTED DURING 1921

Standardization of laboratory work in New York State.. Augustus Wadwsorth, M. D.

Read before the Pathological Section of the Buffalo Academy of Medicine, January 26, 1921.

The scientific background of the modern hospital....... Augustus Wadsworth, M. D.

Read at the Annual Meeting of the Board of Directors and Staff of the Hahnemann Hospital in Rochester, N. Y., February 15, 1921.

Cooperation between the central State Laboratory and the local Municipal and County Laboratories....................... Augustus Wadsworth, M. D.

Read at the Annual Meeting of the Medical Society of the State of New York held in Brooklyn, N. Y., May 4, 1921.

Published in the New York State Journal of Medicine, 1921, 21, 386.

The action of bacterial culture products on phagocytosis.
Augustus Wadsworth, M. D., and E. N. Hoppe.

Read by Dr. Wadsworth at the Thirty-sixth Meeting of the Association of American Physicians held at Atlantic City, May 11, 1921.

Published in the Journal of Immunology, 1921, 6, 399.

The action of leucocytes and brain tissue on diphtheria and tetanus toxins.
Augustus Wadsworth, M. D., and R. Vories.

Published in the Journal of Immunology, 1921, 6, 413.

Public health work of state departments of health in relation to research.
Augustus Wadsworth, M. D.

Read at Conference of Division of States Relations of the National Research Council in Washington, D. C., May 27, 1921.

Cooperation between a central state laboratory and local municipal and county laboratories............................... Augustus Wadsworth, M. D.

Read before the Section on Preventive Medicine and Public Health of the American Medical Association in Boston, Mass., June 8, 1921.

Published in the Journal of the American Medical Association, 1921, 77, 512.

Discussion by Dr. Wadsworth of Dr. Paul A. Lewis' paper " Fundamental features of the complement deviation reaction as applied to tuberculosis" before the Pathological Section of the National Tuberculosis Association, New York City, June 15, 1921.

The importance of local laboratories.................. Augustus Wadsworth, M. D.

Read at the meeting of the Washington County Medical Society, Hudson Falls, N. Y., October 4, 1921.

Observations on the agglutinative and hemolytic action of calf serum on sheep's cells.
Frank Maltaner and Elizabeth Johnston.

Read at the Eighth Annual Meeting of the American Association of Immunologists at Cleveland, Ohio, March 24, 1921.

Published in the Journal of Immunology, 1921, 6, 271.

Observations upon the conglutination phenomenon.
Frank Maltaner and Elisabeth Johnston.

Read at the Eighth Annual Meeting of the American Association of Immunologists at Cleveland, Ohio, March 24-25, 1921.

Published in the Journal of Immunology, 921, 6, 349.

A comparative study of diagnoses made in various laboratories in New York State. Ruth Gilbert.

Read at the Annual Meeting of the Medical Society of the State of New York held in Brooklyn, N. Y., May 4, 1921.

A brief study of the influence of bacterial growth on the globulin content in spinal fluids.................................... Ruth Gilbert and Israel Cohan.

Read before the Laboratory Section of American Public Health Association in New York City, November 15, 1921.

The relative efficiency of various differential media for the isolation of organisms of the enteric disease group................ Ruth Gilbert and Marion B. Coleman.

Read before the Laboratory Section of the American Public Health Association in New York City, November 15, 1921.

The use of sterilized cultures for typhoid agglutination tests. Ruth Gilbert and Anna C. Moore.

Read before the Laboratory Section of the American Public Health Association in New York City, November 15, 1921.

A comparison of ice box fixation with water bath fixation for complement fixation tests with cholesterinised antigen................. H. Virginia Langworthy.

Read before the N. Y. State Association of Public Health Laboratories held at the State Laboratory, New Scotland Ave., October 13, 1921.

The use of a 15-minute titration period for the standardisation of the hemolytic system in the complement fixation test................... Anna C. Moore.

Read before the N. Y. State Association of Public Health Laboratories held at the State Laboratory, New Scotland Ave., October 13, 1921.

A comparison of the value of 0.6% and 6% salt solution in the glycerine outfits for submitting feces.................................... Marion B. Coleman.

Read before the N. Y. State Association of Public Health Laboratories held at the State Laboratory, New Scotland Ave., October 13, 1921.

Occasional irregularities in routine virulence tests.................. Helen H. Owen.

Read before the N. Y. State Association of Public Health Laboratories held at the State Laboratory, New Scotland Ave., October 13, 1921.

Lesions resembling tubercles noted in guinea pigs in which no acid-fast bacilli were found.. Israel Cohan.

Read before the N. Y. State Association of Public Health Laboratories held at the State Laboratory, New Scotland Ave., October 13, 1921.

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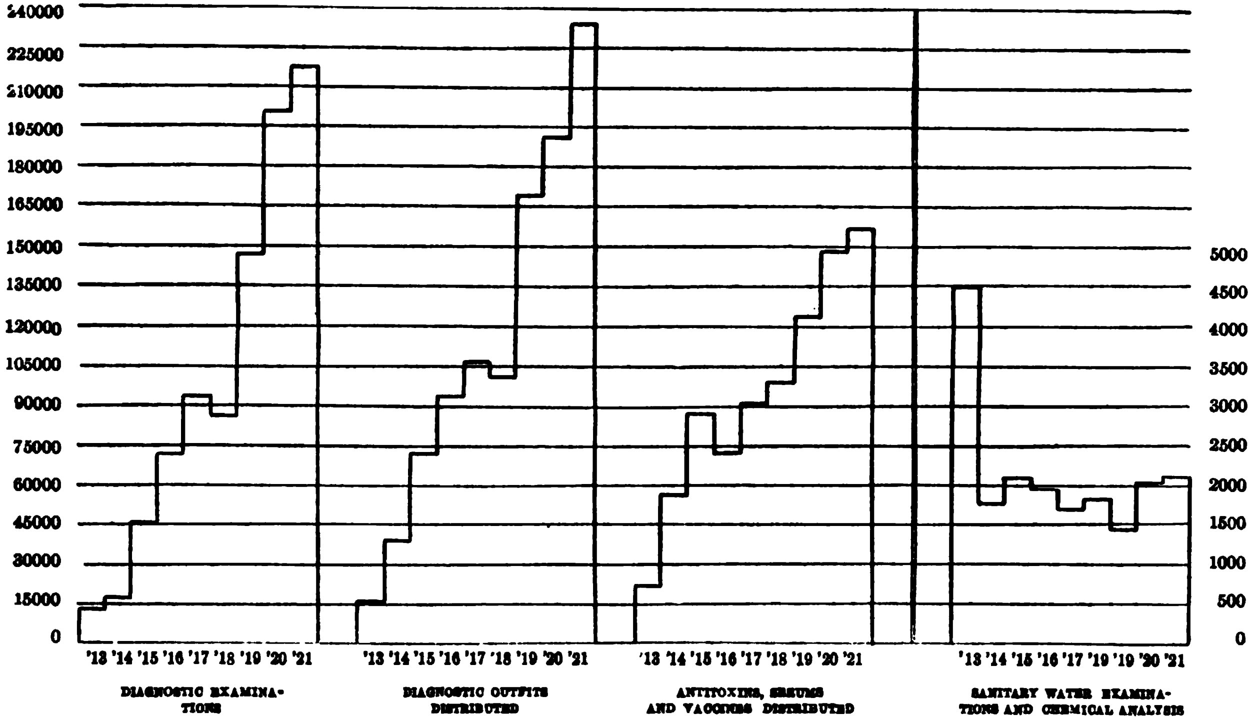
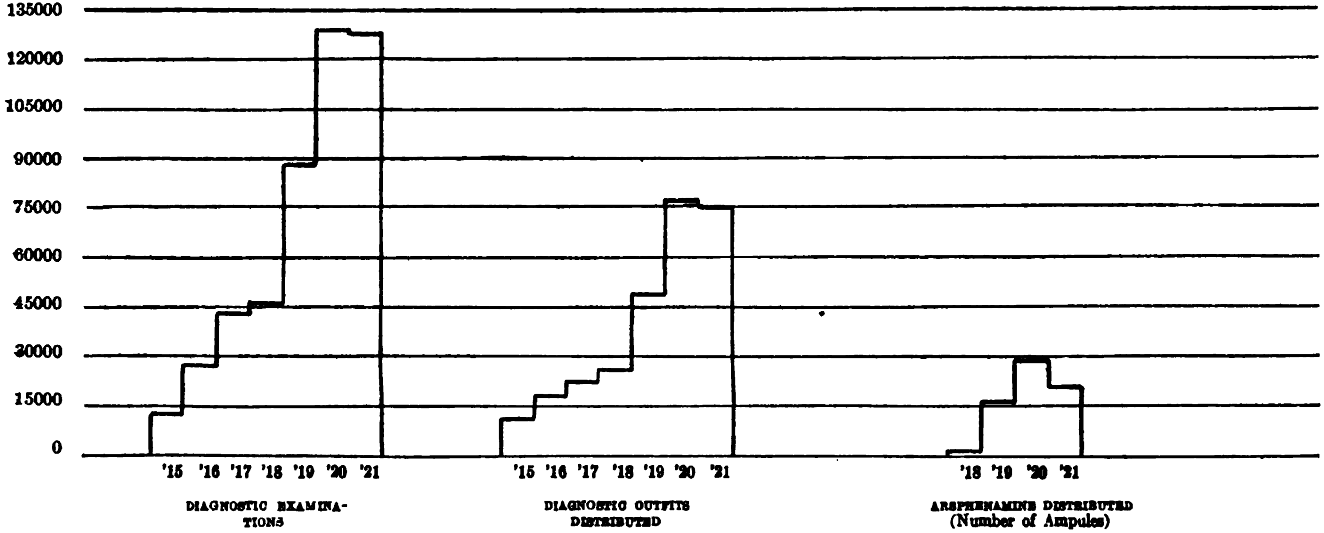
CHART SHOWING THE GROWTH OF THE WORK



*Inspection of the sources of all samples examined in the laboratory was required for the first time in 1914.

CHART SHOWING THE GROWTH OF THE WORK FOR THE DIAGNOSIS AND TREATMENT OF SYPHILIS AND GONORRHEA



DISTRIBUTION OF SERUMS, VACCINES AND OTHER PROPHYLACTIC AND THERAPEUTIC PREPARATIONS AND MISCELLANEOUS SUPPLIES

		SERUMS					VACCINES									ARSPHENAMINE				MISCELLANEOUS											
	Number of packages	Antipneumococcus (50 cc. bottles)	Antimeningococcus (20 cc. bottles)	Antidysentery (20 cc. bottles)	Antianthrax (50 cc. bottles)	Poliomyelitis *	Typhoid	Paratyphoid	Typhoid-paratyphoid	Dysentery	Pertussis	Smallpox — (10 doses per bottle)	Rabies	Pneumococcus	Influenza	1.2 gram	1.0 gram	0.6 gram	0.4 gram	Tuberculin	Outfits for the prevention of Ophthalmia neonatorum		Outfits for the Schick test	Diphtheria toxin-antitoxin mixture	Dysentery toxin-antitoxin mixture	Standard and diagnostic serums, toxin, etc.	Normal horse serum	Media (bottles)	Media (tubes)	Keidel blood culture tubes	Cultures
																					1 cc. outfits	15 cc. outfits									
1914 (pkgs)	...	...	...	...	...	...	1,457	...	...	...	...	...	...	...	...	...	...	...	...	...	24,650	...	...	...	...	...	...	...	...	...	...
1915 "	...	16	30	...	...	...	5,656	...	...	...	211	...	...	...	...	...	...	...	...	...	43,307	...	...	...	...	1	...	...	...	...	...
1916 "	...	433	426	22	...	65	6,058	106	...	23	4,127	515	10	...	...	...	...	...	...	6	30,798	...	4	...	...	4	...	...	...	...	...
1917 "	...	2,253	1,963	614	...	...	7,690	739	920	64	4,521	3,951	215	...	...	...	...	...	...	36	27,077	...	138	188	a 188	b 780	...	c 438	1,016	...	350
1918 "	...	8,330	1,544	814	...	...	3,663	273	2,397	10	5,970	355	1,623	203	8,245	...	...	510	480	36	27,506	...	67	442	...	d 638	...	e 21	1,281	...	326
1919 "	...	806	886	77	...	...	2,307	20	2,421	8	3,005	7	896	8	204	...	3,315	7,145	5,772	24	30,074	...	115	631	...	f 781	37	g1,439	127	...	529
1920 "	...	405	950	85	3	...	2,690	27	5,015	...	6,888	10	149	...	...	301	6,093	14,103	8,461	176	31,999	338	230	1,902	...	h1,702	30	m 282	1,309	31	566
1921 "	...	789	1,581	660	...	...	2,542	...	5,879	6	8,886	...	297	...	...	3,179	804	9,106	7,416	57	28,321	1,243	346	3,190	...	k2,396	20	n 130	1,625	62	79$_3$

a (455 cc.) b (19,736 cc.) c (110,667 cc.) d (244,292 cc.) e (450 cc.) f (51,430 cc.) g (17,560 cc.) h (48,236.5 cc.) k (44,547.8 cc.) m (98,430 cc.) n (60,526 cc.)

* Poliomyelitis serum used in the treatment of poliomyelitis and the vaccine used against smallpox have been distributed only to meet special emergencies. Smallpox vaccine is not yet ready for general distribution. Supplies of the pure vaccine are sent to institutions or schools where it will be used immediately in order to secure practical tests of the variations in its potency, which cannot as yet apparently be controlled in the manufacture on a large scale. This vaccine is the pure vaccine prepared by the methods of Dr. Noguchi of the Rockefeller Institute.

DISTRIBUTION OF DIPHTHERIA AND TETANUS ANTITOXINS AND RECORD OF ADMINISTRATION

	RECORD OF DISTRIBUTION						RECORD OF ADMINISTRATION BASED ON REPORTS FROM HEALTH OFFICERS AND PHYSICIANS									
	PACKAGES DISTRIBUTED						IMMUNIZATIONS REPORTED		CASES TREATED AND REPORTED		RECOVERIES IN CASES TREATED		DEATHS IN CASES TREATED		CASES IN WHICH DIAGNOSIS WAS INDETERMINATE YET TREATED WITH ANTITOXIN	
	Total number of packages	1,000 units* packages	3,000 units packages	6,000 units packages	Total number of units antitoxin distributed†	Average number of units per cc. §	Total number	Total number of units used	Total number	Total number of units used	Total number	Total number of units used	Total number	Total number of units used	Total number	Total number of units used
DIPHTHERIA ANTITOXIN																
1909	......	......	......	......	36,643,500	370	492	2,000,000	1,369	11,250,000	1,235	10,000,000	134	1,250,000	42	618,750
1910	......	......	......	......	55,374,000	530	3,920	5,000,000	1,863	13,500,000	1,700	11,700,000	163	1,800,000	35	700,000
1911	......	......	......	......	65,563,500	550	3,921	9,530,350	2,566	18,317,650	2,354	15,813,650	212	2,504,000	52	174,500
1912	......	......	......	......	61,117,500	550	5,024	7,574,095	2,535	20,996,200	2,345	18,779,700	190	2,216,500	150	450,000
1913	......	......	......	......	66,639,000	600	3,055	6,134,400	1,943	13,612,000	1,766	11,892,600	177	1,719,400	......	474,000
1914	26,461	......	......	......	78,966,000	552	1,994	3,721,950	2,149	14,706,050	1,982	12,693,950	167	2,012,100	285	1,473,500
1915	29,470	......	......	......	83,473,500	791	1,966	4,258,350	2,687	15,225,250	2,370	12,201,750	317	3,023,500	74	251,400
1916	21,171	......	......	......	89,704,500	1,040	1,920	4,556,500	2,129	17,150,200	1,964	15,095,800	165	2,054,400	25	87,500
1917	28,587	......	......	......	101,535,000	896	1,393	1,650,700	1,483	12,096,200	1,372	10,809,100	111	1,287,100	24	82,500
1918	27,031	......	......	......	87,306,000	850	767	876,662	1,188	9,843,300	1,058	8,702,400	130	1,140,900	91	352,000
1919	52,376	14,582	20,945	16,849	178,511,000	874.65	1,170	1,518,500	1,288	11,312,500	1,207	10,195,000	81	1,117,500	209	1,284,300
1920	52,891	13,157	20,709	19,025	189,434,000	847.15	1,140	1,426,900	1,216	13,363,100	1,138	11,764,100	78	1,599,000	368	2,228,300
1921	63,321	13,699	22,159	27,463	244,954,000	1,049.5	1,520	2,076,950	1,399	17,200,800	1,287	15,145,000	112	2,055,800	331	2,807,800
		1,500 units	10,000 units	20,000 units												
TETANUS ANTITOXIN																
1909	......	......	......	......	6,369,500	......	......	819,950	15	......	5	......	10	687,000	......	......
1910	......	......	......	......	14,482,500	......	......	326,400	14	......	5	......	9	1,950,500	......	......
1911	......	......	......	......	12,142,500	......	......	587,400	23	......	7	......	16	1,474,000	......	......
1912	......	......	......	......	12,762,000	......	......	791,450	31	......	9	......	22	1,413,000	......	......
1913	......	......	......	......	11,719,500	......	......	740,400	25	......	8	......	17	1,328,000	......	......
1914	7,005	......	......	......	24,075,000	......	69[illegible]	1,762,200	15	......	2	......	13	153,500	......	......
1915‡	8,664	......	......	......	42,142,500	1,024	410	823,800	16	390,000	2	16,000	14	374,000	......	......

* Before May, 1917, packages containing 1,500 units diphtheria antitoxin were distributed for immunization. † From 1914 for actual number of units distributed, add 20 per cent representing excess contained in each package over number of units given on label. ‡ From this date all antitoxin accurately standardized. § From 1914 to 1921 average based on antitoxin tested during the year. Beginning 1921 average based on antitoxin distributed during the year. Averages previous to 1914 not wholly accurate.

DISTRIBUTION OF DIPHTHERIA AND TETANUS ANTITOXINS AND RECORD OF ADMINISTRATION—(*Continued*)

	RECORD OF DISTRIBUTION						RECORD OF ADMINISTRATION BASED ON REPORTS FROM HEALTH OFFICERS AND PHYSICIANS									
	PACKAGES DISTRIBUTED						IMMUNIZATIONS REPORTED		CASES TREATED AND REPORTED		RECOVERIES IN CASES TREATED		DEATHS IN CASES TREATED		CASES IN WHICH DIAGNOSIS WAS INDETERMINATE YET TREATED WITH ANTITOXIN	
	Total number of packages	1,500 units	10,000 units	20,000 units	Total number of units antitoxin distributed†	Average number of units per cc. §	Total number	Total number of units used	Total number	Total number of units used	Total number	Total number of units used	Total number	Total number of units used	Total number	Total number of units used
TETANUS ANTITOXIN — *Continued*																
1916	8,842	....	....	....	34,959,000	971	778	1,275,450	66	1,656,100	33	727,100	33	929,000	......	....
1917	8,616	....	....	....	39,441,000	1,056.9	558	1,202,250	28	439,800	24	293,500	4	146,300	......	....
1918	8,063	....	....	....	41,221,500	845	379	786,890	11	638,500	8	554,500	3	84,000	......	....
1919	10,869	8,008	1,939	842	48,362,000	850.28	503	1,067,900	14	1,378,500	4	993,000	10	385,500	......	....
1920	11,797	9,512	1,491	794	45,058,000	742	552	883,300	15	1,070,000	12	802,500	3	267,500	......	....
1921	14,303	11,438	1,809	1,056	56,367,000	764.5	525	958,950	9	216,000	3	135,000	6	81,000	......	....

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* Before May, 1917, packages containing 1,500 units diphtheria antitoxin were distributed for immunisation. † From 1914 for actual number of units distributed, add 20 per cent representing excess contained in each package over number units given on label. ‡ From this date all antitoxin accurately standardised. § From 1914 to 1921 average based on antitoxin tested during the year. Beginning 1921 average based on antitoxin distributed during the year. Averages previous to 1914 not wholly accurate.

DISTRIBUTION OF DIAGNOSTIC OUTFITS

	Diphtheria culture outfits and tubes	Tuberculosis sputum outfits	TYPHOID FEVER OUTFITS			Syphilis blood serum outfits	Gonorrhea smear outfits	Malaria smear outfits	Physicians' handbag outfits	Miscellaneous outfits	Total
			Blood		Feces						
			Slides	Tubes							
1913	*	*	*	....	*	*	*	*	....	*	15,984
1914	*	*	*	....	*	*	*	*	....	*	39,396
1915	41,419	8,391	6,666	....	3,181	9,103	1,188	356	....	2,108	72,362
1916	49,331	9,096	†8,184	....	4,819	15,039	2,884	1,267	....	3,555	94,175
1917	59,204	9,866	6,269	....	3,448	20,566	2,095	971	....	4,217	106,636
1918	53,791	9,300	4,290	....	1,931	23,146	3,038	824	....	3,839	100,159
1919	91,150	13,230	4,969	....	3,435	43,929	5,822	348	....	6,226	169,109
1920	82,516	15,940	5,354	....	4,007	71,195	5,835	....	....	6,118	190,965
1921	122,381	15,780	6,960	320	5,186	66,482	8,444	....	513	8,544	234,610

* No record. † This exceptional increase is due to the paratyphoid epidemic among the troops returning to the State from the Mexican border.

DIAGNOSTIC EXAMINATIONS

Central Laboratory, Albany, N. Y.

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Diphtheria:													
Throat cultures:													
Positive	755	1,822	1,761	1,322	2,909	4,242	7,135	7,082	7,625	6,483	12,627	7,369	......
For diagnosis	......	......	......	......	......	......	......	......	......	......	......	......	1,547
For release	......	......	......	......	......	......	......	......	......	......	......	......	5,824
To determine carrier	......	......	......	......	......	......	......	......	......	......	......	......	1,129
Undesignated	......	......	......	......	......	......	......	......	......	......	......	......	130
Negative	1,014	4,580	5,573	4,298	6,127	8,704	11,330	11,795	17,613	11,038	18,085	12,872	......
For diagnosis	......	......	......	......	......	......	......	......	......	......	......	......	3,112
For release	......	......	......	......	......	......	......	......	......	......	......	......	4,865
To determine carrier	......	......	......	......	......	......	......	......	......	......	......	......	7,094
Undesignated	......	......	......	......	......	......	......	......	......	......	......	......	368
Unsatisfactory	201	......	......	......	......	917	804	1,577	1,569	1,652	2,986	2,099	......
For diagnosis	......	......	......	......	......	......	......	......	......	......	......	......	898
For release	......	......	......	......	......	......	......	......	......	......	......	......	1,213
To determine carrier	......	......	......	......	......	......	......	......	......	......	......	......	1,574
Undesignated	......	......	......	......	......	......	......	......	......	......	......	......	128
Supplementary tests	......	......	......	......	......	......	4,824	4,813	4,892	2,600	2,256	3,911	10,343
Virulence tests	......	......	......	......	......	......	37	221	69	96	353	......	......
Positive	......	......	......	......	......	......	......	......	......	......	......	288	462
Negative	......	......	......	......	......	......	......	......	......	......	......	135	247
Unsatisfactory	......	......	......	......	......	......	......	......	......	......	......	123	168
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	571	1,786
Epidemic — Poughkeepsie	......	......	......	......	......	......	......	107	......	......	......	......	......
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	14	2
Total	1,970	6,402	7,334	5,620	9,036	13,863	24,130	25,595	31,768	21,869	36,307	27,322	40,890
Enteric diseases:													
Blood (agglutination test):†													
Typhoid and paratyphoid:													
Positive:													
Typhoid	92	254	288	297	350	435	610	965	937	865	631	573	596
Paratyphoid A*	......	......	......	......	......	......	......	......	1	2	4	......	......
Paratyphoid B*	......	......	......	......	......	......	......	......	2	8	3	6	5
Combined	......	......	......	......	......	......	......	......	43	5	5	3	......

Negative	179	378	441	552	665	896	970	1,966	1,874	1,668	1,455	1,324	1,409
Unsatisfactory	87						208	106	237	415	307	427	643
Supplementary tests												4,906	6,635
Public health clinics												3	
Total	**358**	**632**	**729**	**849**	**1,015**	**1,331**	**1,788**	**3,037**	**3,094**	**2,963**	**2,405**	**7,242**	**9,288**
Dysentery:*													
Positive									1		6	4	1
Negative									1		13	3	6
Supplementary tests												9	14
Epidemic (Poughkeepsie and 2d Regiment)								3,174					
Total								3,174	2		19	16	21
Total	358	632	729	849	1,015	1,331	1,788	6,211	3,096	2,963	2,424	7,258	9,309
Intestinal discharge and urine:													
Positive:													
Typhoid							15	81	124	92	91	91	148
Paratyphoid A*										5	6	2	3
Paratyphoid B*									6	7		17	10
Dysentery*									6	14	14	23	16
Negative							149	687	789	1,041	1,153	1,539	1,142
Unsatisfactory							20	4	2	27	77	64	159
Supplementary tests												381	573
Epidemic (Poughkeepsie and 2d Regt.)								1,567					
Total							184	2,339	927	1,186	1,341	2,117	2,051
Syphilis:													
Complement fixation test:													
Blood:													
Positive							1,212	2,474	3,378	3,704	5,392	6,695	6,328
Negative							3,378	5,854	9,002	9,619	14,748	28,390	29,546
Doubtful							847	1,249	1,821	1,988	9,809	7,670	5,985
Unsatisfactory							219	454	706	921	976	1,983	1,543
Supplementary tests							6,524	11,804	17,292	14,517	37,434	54,131	61,164
Spinal fluid:													
Positive													129
Negative													400
Doubtful													20
Unsatisfactory													83
Supplementary tests													773
Dark field examinations												3	1
Supplementary tests												4	
Total							**12,180**	**21,335**	**32,199**	**30,749**	**68,359**	**98,876**	**105,972**

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* Figures for 1917 represent examinations from July 1.

† Since August, 1919, all specimens of blood have been tested with cultures of B. paratyphosus A and B, besides B. typhosus.

DIAGNOSTIC EXAMINATIONS — (*Continued*)

Central Laboratory — (Continued)

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Gonorrhea:													
Complement fixation test:													
Positive	......	......	......	......	......	......	1	55	150	199	......	......	......
Negative	......	......	......	......	......	......	22	836	1,909	1,105	......	......	......
Unsatisfactory	......	......	......	......	......	......	24	64	244	122	......	......	......
Doubtful	......	......	......	......	......	......	7	298	626	248	......	......	......
Supplementary tests	......	......	......	......	......	......	5	2,056	2,414	999	......	......	......
Total	......	......	......	......	......	......	**59**	**3,304**	**5,343**	**2,673**	......	......	......
Microscopical examinations:													
Positive	......	......	......	......	......	......	17	128	100	180	666	623	643
Negative	......	......	......	......	......	......	76	868	241	553	1,200	1,224	1,581
Unsatisfactory	......	......	......	......	......	......	5	148	53	46	247	191	153
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	1,551	1,736
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	8	6
Total	......	......	......	......	......	......	**98**	**1,144**	**394**	**779**	**2,113**	**3,597**	**4,119**
Tuberculosis:													
Sputum examinations:													
Positive	526	584	658	793	691	875	1,117	1,370	1,428	1,402	1,622	1,710	1,551
Negative	1,245	1,277	1,755	1,966	2,192	2,318	2,198	3,919	4,464	4,460	5,549	5,492	4,782
Unsatisfactory	5	......	......	......	......	......	62	36	28	34	15	291	433
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	8,157	7,493
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	94	30
Total	**1,776**	**1,861**	**2,413**	**2,759**	**2,883**	**3,193**	**3,377**	**5,325**	**5,915**	**5,896**	**7,186**	**15,744**	**14,289**
Pneumonia:													
Pneumococcus type differentiation:													
Sputum:													
Positive:													
Type I	......	......	......	......	......	......	......	......	127	126	36	23	32
Type II	......	......	......	......	......	......	......	......	38	25	17	4	5
Type II atypical	......	......	......	......	......	......	......	......	26	6	......	......	7
Type III	......	......	......	......	......	......	......	......	70	51	43	57	14
Type IV	......	......	......	......	......	......	......	......	146	96	103	69	40
Combined	......	......	......	......	......	......	......	......	......	19	4	2	2
Negative	......	......	......	......	......	......	......	......	137	326	290	106	39
Unsatisfactory	......	......	......	......	......	......	......	......	27	29	8	37	6
Supplementary tests	......	......	......	......	......	......	......	......	6	2	232	33	85
Total	......	......	......	......	......	......	**17**	**174**	**577**	**680**	**733**	**331**	**230**

Urine:													
Negative	......	......	......	......	......	......	......	......	4	......	......	......	......
Spinal fluid:													
Positive Type IV	......	......	......	......	......	......	......	......	1	......	......	......	......
Negative	......	......	......	......	......	......	......	......	1	......	......	......	......
Total	......	......	......	......	......	......	17	174	583	680	733	331	230
Influenza:													
Positive	......	......	......	......	......	......	......	......	......	11	39	......	......
Negative	......	......	......	......	......	......	......	......	......	121	38	......	......
Unsatisfactory	......	......	......	......	......	......	......	......	......	......	......	......	......
Doubtful	......	......	......	......	......	......	......	......	......	9	......	......	......
Total	......	......	......	......	......	......	......	......	......	141	77	......	......
Malaria:**													
Positive	......	......	......	......	......	......	......	......	......	......	......	4	18
Negative	......	......	......	......	......	......	......	......	......	......	......	80	74
Unsatisfactory	......	......	......	......	......	......	......	......	......	......	......	18	8
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	73	15
Total	......	......	......	......	......	......	......	......	......	......	......	175	115
Miscellaneous examinations:													
Discharges, pus, etc	......	......	......	......	......	......	......	......	......	......	......	303	397
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	726	914
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	21	......
Intestinal discharge	......	......	......	......	......	......	......	......	......	......	......	76	62
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	150	146
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	15	5
Urine analyses	......	......	......	......	......	......	......	......	......	......	......	153	322
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	362	841
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	312	233
Sputum	......	......	......	......	......	......	......	......	......	......	......	93	96
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	257	280
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	7	......
Blood	......	......	......	......	......	......	......	......	......	......	......	114	134
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	306	375
Blood cultures	......	......	......	......	......	......	......	......	......	......	......	34	35
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	87	90
Epidemic (Poughkeepsie and 2d Regt.)	......	......	......	......	......	......	......	60	......	......	......	......	......
Blood — chemical analyses	......	......	......	......	......	......	......	......	......	......	......	1	1
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	2	1
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	1	16
Blood—coagulation time:													
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	......	1
Blood—Weil-Felix reaction	......	......	......	......	......	......	......	......	......	......	......	......	1

** Previous to 1920 listed under miscellaneous examinations.

DIAGNOSTIC EXAMINATIONS — (*Concluded*)

Central Laboratory — (Concluded)

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Miscellaneous examinations — *Concl'd*													
Stomach contents	......	......	......	......	......	......	......	......	......	......	......	2	1
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	6	3
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	1	35
Spinal fluid	......	......	......	......	......	......	......	......	......	......	......	407	291
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	519	771
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	7	4
Pleural, ascitic and other fluids	......	......	......	......	......	......	......	......	......	......	......	41	47
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	186	202
Public health clinics	......	......	......	......	......	......	......	......	......	......	......	2	......
Pathological specimens	......	......	......	......	......	......	......	......	......	......	......	140	183
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	75	31
Animal tests (autopsies)	......	......	......	......	......	......	......	......	......	......	......	172	250
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	209	185
Unclassified	......	......	......	......	......	......	......	......	......	......	......	19	11
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	29	......
Total	......	......	......	......	......	91	151	688	740	631	1,280	4,835	5,964
Special investigations:													
Microscopical examinations	......	......	......	......	......	......	......	......	......	......	......	10	70
Bacteriological examinations	......	......	......	......	......	......	......	......	......	......	......	26	135
Pathological examinations	......	......	......	......	......	......	......	......	......	......	......	2	......
Chemical analyses	......	......	......	......	......	......	......	......	......	148	102	312	345
Laboratory investigations	......	......	......	......	......	......	......	......	......	......	......	122	51
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	126	26
Grand total	4,124	8,895	10,476	9,228	12,934	18,478	41,984	66,115	80,965	67,715	119,922	160,853	183,566

DIAGNOSTIC EXAMINATIONS — (*Continued*)

Branch Laboratory, New York City †

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Diphtheria:													
Throat cultures:													
Positive							1,387	902	824	680	1,409	2,586	
For diagnosis													662
For release													1,732
To determine carrier													312
Undesignated													63
Negative							1,780	1,898	2,780	4,167	4,201	3,374	
For diagnosis													1,113
For release													1,287
To determine carrier													1,328
Undesignated													112
Unsatisfactory							458	325	241	469	901	1,796	
For diagnosis													471
For release													661
To determine carrier													1,030
Undesignated													75
Supplementary tests							100	564	1,047	893	1,338	2,061	2,380
Virulence tests								48	77	21	349		
Positive												196	176
Negative												558	799
Unsatisfactory												65	49
Supplementary tests										4	67	105	78
Total							3,725	3,737	4,969	6,234	8,265	10,741	12,328
Enteric diseases:													
Blood (agglutination test):													
Typhoid and paratyphoid:													
Positive:													
Typhoid							18	48	70	29	36	42	49
Paratyphoid A*											2	1	
Paratyphoid B *											2		
Combined											3		
Negative							53	387	148	93	203	179	197
Unsatisfactory							13	8	30	43	131	98	140
Supplementary tests												5	21
Total							84	443	248	165	377	325	407

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* Previous to January, 1918, examinations for paratyphoid fever and dysentery were recorded as typhoid examinations.

† Although located in New York City this laboratory does not serve the city but the outlying districts — Long Island and Rockland, Orange and Westchester counties.

DIAGNOSTIC EXAMINATIONS — (*Concluded*)

Branch Laboratory, New York City † — (Continued)

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Enteric diseases — *Concluded*													
Dysentery:													
Negative													2
Total													**409**
Intestinal discharge and urine:													
Positive:													
Typhoid							1	11	10	6	35	57	35
Paratyphoid A*													
Paratyphoid B *													1
Dysentery *												2	
Negative							2	532	1,689	90	141	633	360
Unsatisfactory								1	64	25	20	31	17
Supplementary tests													27
Total							**3**	**544**	**1,763**	**121**	**196**	**723**	**440**
Syphilis:													
Complement fixation test:													
Blood:													
Positive							62	224	1,320	747	776	854	841
Negative							201	935	2,960	1,186	2,257	2,569	4,780
Doubtful											594	5,245	2,687
Unsatisfactory							44	137	437	344	99	224	317
Supplementary tests								57	356	7,413	11,937	18,089	9,720
Spinal fluid:													
Positive													69
Negative													94
Doubtful													12
Unsatisfactory													14
Supplementary tests													242
Total							**307**	**1,353**	**5,073**	**9,680**	**15,663**	**26,981**	**18,726**
Gonorrhea:													
Complement fixation test:													
Positive							19	7	23	36	37	6	
Negative							13	96	567	271	310	21	
Unsatisfactory							23	35	61	213	22	2	
Doubtful											273	31	
Supplementary tests							52	20	47	582	821	56	
Total							**107**	**158**	**698**	**1,102**	**1,463**	**116**	

Microscopical examinations:													
Positive	......	......	......	......	......	......	3	5	13	30	34	64	96
Negative	......	......	......	......	......	......	2	6	24	76	66	204	427
Unsatisfactory	......	......	......	......	......	......	1	8	5	29	14	16	9
Total	......	......	......	......	......	......	6	14	42	135	114	284	532
Tuberculosis:													
Sputum examinations:													
Positive	......	......	......	......	......	......	52	46	125	110	100	177	200
Negative	......	......	......	......	......	......	113	130	311	384	373	685	851
Unsatisfactory	......	......	......	......	......	......	......	5	6	44	9	27	23
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	......	156
Total	......	......	......	......	......	......	165	181	442	538	482	889	1,230
Pneumonia:													
Pneumococcus type differentiation:													
Sputum:													
Positive:													
Type I	......	......	......	......	......	......	......	......	......	13	6	3	8
Type II	......	......	......	......	......	......	......	......	......	8	4	......	......
Type III	......	......	......	......	......	......	......	......	......	4	13	12	3
Type IV	......	......	......	......	......	......	......	......	......	21	22	22	10
Combined	......	......	......	......	......	......	......	......	......	......	2	......	3
Negative	......	......	......	......	......	......	......	......	......	32	68	56	21
Unsatisfactory	......	......	......	......	......	......	......	......	......	9	12	4	1
Supplementary tests	......	......	......	......	......	......	......	......	......	80	168	40	6
Total	......	......	......	......	......	......	......	33	123	167	295	137	52
Influenza:													
Positive	......	......	......	......	......	......	......	......	......	13	......	......	......
Negative	......	......	......	......	......	......	......	......	......	205	......	......	......
Unsatisfactory	......	......	......	......	......	......	......	......	......	8	......	......	......
Total	......	......	......	......	......	......	......	......	......	226	......	......	......
Malaria:‡													
Positive	......	......	......	......	......	......	......	......	......	......	......	7	7
Negative	......	......	......	......	......	......	......	......	......	......	......	35	47
Unsatisfactory	......	......	......	......	......	......	......	......	......	......	......	9	7
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	2	14
Total	......	......	......	......	......	......	......	......	......	......	......	53	84
Vincent's Angina:													
Negative	......	......	......	......	......	......	......	......	......	......	......	......	4
Unsatisfactory	......	......	......	......	......	......	......	......	......	......	......	......	1
Total	......	......	......	......	......	......	......	......	......	......	......	......	5
Miscellaneous examinations:													
Discharges, pus, etc.	......	......	......	......	......	......	......	......	......	......	......	30	48
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	......	8
Intestinal discharges	......	......	......	......	......	......	......	......	......	......	......	5	13
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	......	6
Urine analyses	......	......	......	......	......	......	......	......	......	......	......	14	9
Supplementary tests	......	......	......	......	......	......	......	......	......	......	......	......	8

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‡ Previous to 1920 listed under Miscellaneous Examinations.

DIAGNOSTIC EXAMINATIONS — (*Concluded*)

Branch Laboratory, New York City † — (Concluded)

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Miscellaneous examinations — *Cond'd*													
Sputum	....	....	....	....	....	....	....	....	....	....	....	....	11
Supplementary tests	....	....	....	....	....	....	....	....	....	....	....	....	3
Blood	....	....	....	....	....	....	....	....	....	....	....	36	40
Supplementary tests	....	....	....	....	....	....	....	....	....	....	....	1	4
Blood cultures	....	....	....	....	....	....	....	....	....	....	....	11	30
Stomach contents	....	....	....	....	....	....	....	....	....	....	....	....	2
Spinal fluid	....	....	....	....	....	....	....	....	....	....	....	30	35
Supplementary tests	....	....	....	....	....	....	....	....	....	....	....	6	40
Pleural, ascitic and other fluids	....	....	....	....	....	....	....	....	....	....	....	2	6
Pathological specimens	....	....	....	....	....	....	....	....	....	....	....	47	86
Animal tests (autopsies)	....	....	....	....	....	....	....	....	....	....	....	5	22
Supplementary tests	....	....	....	....	....	....	....	....	....	....	....	....	4
Unclassified	....	....	....	....	....	....	....	....	....	....	....	32	7
Total	....	....	....	....	....	....	60	61	77	90	216	219	382
Special investigations:													
Bacteriological examinations	....	....	....	....	....	....	....	....	....	....	....	15	....
Milk examinations:													
Bacteriological	....	....	....	....	....	....	....	....	....	....	....	16	6
Supplementary tests	....	....	....	....	....	....	....	....	....	....	....	31	....
Grand total	....	....	....	....	....	....	4,457	6,524	13,435	18,468	27,071	40,530	34,194

† Although located in New York City this laboratory does not serve the city but the outlying districts — Long Island and Rockland, Orange and Westchester counties.

RECORD OF MEDIA PREPARATION

	1918	1919	1920	1921
Medium, routine:	*cc.*	*cc.*	*cc.*	*cc.*
Infusion, beef	587,500	774,000	1,341,670	869,860
Infusion, veal	169,000	211,000	181,622	68,783
Broth, beef extract	449,400	278,500	322,650	308,225
Broth, beef infusion	692,000	744,250	867,915	656,775
Broth, veal infusion (includes toxin broths)	372,700	965,000	1,605,129	1,115,217
Agar, beef extract	1,205,000	573,500	888,060	889,712
Agar, beef infusion	759,500	737,000	560,950	570,680
Agar, veal infusion	168,700	219,500	134,564	73,230
Agar, hormone	....	....	....	5,500
Gelatine	100,500	131,000	131,307	125,500
Milk	....	....	11,450	18,160
Nitrate solution	....	....	16,000	19,000
Dunham's solution	....	....	15,000	21,700
Serum water (Andrade) base	....	....	....	47,040
Peptone water (Andrade) base	....	....	....	16,000
Total	4,504,300	4,633,750	6,076,317	4,805,382
Medium, combined:	*cc.*	*cc.*	*cc.*	*cc.*
Ascitic fluid broth	....	....	....	8,100
Ascitic fluid semi-solid	....	....	*19,000	24,000
Blood agar	....	....	77,870	123,705
Blood agar, coagulated (B. influenzae)	....	....	60,000	49,100
Blood agar, coagulated (B. pertussis)	....	....	10,000	12,715
Dextrose (0.20%) serum agar	....	....	....	62,630
Dextrose (1.0%) serum agar	....	....	58,600	51,180
Loeffler's blood serum	205,010	190,760	349,309	633,600
Petroff's egg medium	....	....	8,800	10,036
Serum semi-solid medium	....	....	9,000	10,435
Serum water with carbohydrates	9,150	13,100	20,130	35,285
Peptone water with carbohydrates	....	....	....	17,750
Total	214,160	203,860	612,709	1,038,546
Solutions:	*cc.*	*cc.*	*cc.*	*cc.*
Aqueous carbohydrate (20%)	145,400	29,500	58,170	50,805
Sodium chloride (0.5 and 0.85%)	....	....	796,100	976,850
Sodium citrate (17%)	....	....	298,200	491,800
Sodium chloride glycerine	....	....	59,141	66,966
Phenol	....	....	189,700	250,800
Andrade's indicator	....	....	2,800	6,100
Phenolphthalein indicator	....	....	1,108	1,000
Litmus	....	....	....	650
Total	145,400	29,500	1,405,219	1,844,971
Media, special:	*cc.*	*cc.*	*cc.*	*cc.*
Agars	....	....	....	51,196
Broths	....	....	....	32,400
Solutions	....	....	....	23,922
Miscellaneous	....	....	....	14,600
Bile	....	....	....	300
Total	....	....	....	122,418
Grand total	4,863,860	4,867,110	8,094,245	7,811,317

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* The number of cubic centimeters of Combined Medium prepared in 1920 is estimated from the number of tubes, etc.

SUMMARY OF DIAGNOSTIC EXAMINATIONS MADE BY THE APPROVED LABORATORIES OF NEW YORK STATE SINCE 1915

	1915	1916	1917	1918	1919	1920	1921
Division of Laboratories and Research, New York State Department of Health:							
Central Laboratory, Albany	48,430	74,621	82,693	69,396	121,288	162,416	185,308
Branch Laboratory, New York City	4,457	6,524	13,435	18,468	27,071	40,678	34,233
State Institute for Study of Malignant Disease, Buffalo	....	2,120	2,330	2,282	3,387	3,909	5,345
COUNTY LABORATORIES							
Amsterdam—Julius Wasserman Laboratory (Montgomery county)	....	....	1,482	1,472	3,278	1,878	7,720
Auburn—Cayuga County Laboratory; also municipal and private work	....	....	....	....	....	3,536	11,612
Batavia—Genesee County Laboratory; also municipal, hospital and private work	2,420	2,182	2,648	2,943	3,554	3,360	5,078
Belmont—Allegany County Hygienic Laboratory	107	488	583	643	618	1,383	1,664
Canandaigua—Ontario County Laboratory; also hospital work	1,507	1,379	1,408	934	1,544	823	1,887
Corning—Steuben County Hygienic Laboratory	4,268	5,617	7,536	7,055	9,147	8,521	10,324
Geneseo—Livingston County Laboratory	739	534	441	345	291	804	2,580
Glens Falls—Warren County Laboratory; also hospital and private work	3,520	6,263	5,205	1,875	4,326	4,910	6,908
Oneida—Madison County Bacteriological Laboratory; also hospital work	436	523	331	....	....	349	1,384
Pomona—Summit Park Sanatorium Laboratory; also municipal and private work	....	....	....	....	....	1,527	1,765
*Rochester—Monroe County Bacteriological Laboratory; also private work	....	....	....	....	....		2,776
*Saratoga Springs—Saratoga County Laboratory; also municipal, hospital and private work	....	....	....	....	....	....	2,307
MUNICIPAL LABORATORIES							
Buffalo—Bureau of Laboratories; also county work	33,336	35,606	47,923	49,115	98,222	100,714	101,651
Elmira—Elmira City Laboratory; also county, hospital and private work	3,931	4,520	4,683	3,658	2,639	3,007	3,968
Geneva—Geneva City Laboratory	....	....	....	....	....	8,089	7,892
Gloversville—Gloversville City Laboratory; also county, hospital and private work	277	421	967	1,606	415	427	1,934
Kingston—Kingston City Laboratory; also county work	....	....	....	....	1,651	3,834	5,313
Middletown—Laboratory of the City Health Department	....	....	....	36	303	458	581
Niagara Falls—Public Health Laboratory	794	3,297	7,367	....	....	9,628	18,750
Olean—Olean City Laboratory	....	....	1,080	....	676	1,906	2,091
*Poughkeepsie—Poughkeepsie City Laboratory	....	853	1,925	2,115	6,450	2,663	2,419
Rochester—Health Bureau Laboratory; also hospital work	2,545	3,596	7,053	7,727	11,296	19,099	24,695
Rome—Rome City Laboratory	258	631	522	569	220	995	2,232
Schenectady—Pathological Laboratory of the City and County of Schenectady; also hospital and private work	1,345	3,077	7,124	8,249	1,306	17,651	26,903
Syracuse—Laboratory of the Department of Health; also county work	11,623	15,853	16,918	13,215	14,907	17,820	29,535
Troy—Troy City Laboratory; also private work	1,372	1,388	1,766	2,487	4,000	3,851	4,556
Utica—Utica City Laboratory; also private work	643	765	....	2,506	5,594	5,446	6,588
Yonkers—Bureau of Health Laboratory	3,768	3,709	4,517	8,392	6,612	6,689	9,158

*** Approved at various times during 1921; figures represent work performed since approval.**

Hospital Laboratories							
Albany—Albany Hospital Laboratory; also county and private work	....	....	....	11,462	10,360	13,524	14,222
*Buffalo—Department of Laboratories, Buffalo General Hospital; also private work	....	....	....	....	....	5,259	5,254
**Buffalo—Division of Laboratories, Buffalo City Hospital and Dispensaries	....	....	....	....	....	....	....
*Cambridge—Laboratory of the Mary McClellan Hospital	....	....	....	....	....	....	3,203
Clifton Springs—Laboratory of the Clifton Springs Sanitarium; also municipal, county and private work	....	....	....	....	....	16,995	33,283
*Elmira—Arnot-Ogden Memorial Hospital	....	....	....	....	....	....	1,078
Newburgh—St. Luke's Hospital Pathological Laboratory; also private work	....	....	....	....	....	2,058	10,299
**Niagara Falls—Niagara Falls Memorial Hospital Laboratory; also private work	....	....	....	....	....	....	....
†Olean—Clinic Hospital Laboratory; also private work	....	....	....	....	....	....	5,434
*Port Jefferson—St. Charles' Hospital Laboratory; also municipal work	....	....	....	....	....	....	982
Poughkeepsie—Vassar Brothers Hospital Laboratory; also private work	....	....	....	....	....	5,186	7,418
Rochester—Highland Hospital Diagnostic and Research Laboratory	....	....	....	....	....	5,962	16,368
Rochester—Pathological Laboratory of Rochester Homeopathic Hospital; also private work	....	....	....	....	....	9,161	20,835
*†Troy—Cluett Pathological Laboratory, Samaritan Hospital	....	....	....	....	....	....	....
Trudeau—Trudeau Sanatorium Research and Clinical Laboratory	....	....	....	....	....	4,699	5,059
Utica—Clarke Memorial Laboratory, St. Elizabeth's Hospital; also private work	....	....	....	....	....	1,015	2,530
**Utica—Faxton Hospital Laboratory	....	....	....	....	....	....	....
**Valhalla—Grasslands Hospital; also county and private work	....	....	....	....	....	....	....
White Plains—Bloomingdale Hospital Laboratory; also private work	....	....	....	....	....	2,996	5,514
Yonkers—St. Joseph's Hospital Clinical Laboratory; also private work	....	....	....	....	....	996	1,970
State Institutions							
Binghamton—Binghamton State Hospital Laboratory	....	....	....	....	....	1,915	4,811
*Collins—Pathological Laboratory, Gowanda State Hospital; also municipal and private work	....	....	....	....	....	....	3,393
*Kings Park—Kings Park State Hospital Laboratory	....	....	....	....	....	....	5,498
*New York City—Manhattan State Hospital Laboratory	....	....	....	....	....	....	8,215
*New York City—New York State Psychiatric Institute	....	....	....	....	....	....	4,146
Ogdensburg—St. Lawrence State Hospital Laboratory	....	....	....	....	....	....	3,763
Poughkeepsie—Hudson River State Hospital Laboratory; also private work	....	....	....	1,806	2,120	4,729	6,823
**Rochester—Rochester State Hospital Laboratory	....	....	....	....	....	....	....
Sonyea—Craig Colony Laboratory	....	....	....	....	....	917	3,016
*Utica—George Alder Blumer Research Laboratory, Utica State Hospital	....	....	....	....	....	....	2,533
*Willard—Willard State Hospital	....	....	....	....	....	....	905
Educational Institutions							
*Ithaca—Laboratory of the New York State Veterinary College, Cornell University; also municipal work	....	....	....	....	....	....	780
Saranac Lake—Saranac Laboratory for the Study of Tuberculosis; also municipal and private work	....	....	....	....	....	3,962	5,145

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* Approved at various times during 1921; figures represent work performed since approval.

** Approved during December 1921; therefore no reports were submitted.

† Complete reports of work for 1921 not filed.

SUMMARY OF DIAGNOSTIC EXAMINATIONS MADE BY THE APPROVED LABORATORIES OF NEW YORK STATE SINCE 1915 — *(Concluded)*

	1915	1916	1917	1918	1919	1920	1921
PRIVATE LABORATORIES							
Albany—Bender Hygienic Laboratory; also municipal and hospital work	9,836	12,398	14,583	5,557	17,483	22,620	23,274
Amsterdam—Laboratory of Dr. Lew H. Finch	....	....	....	....	....	5,233	8,880
Auburn—Laboratories of Chemical and Microscopical Diagnosis	....	....	....	....	....	569	....
Binghamton—Kilmer Pathological Laboratory	....	....	....	....	826	4,002	5,993
Binghamton—Nelson and Lauder Laboratory; also county and municipal work	....	....	5,620	4,653	4,967	5,030	9,866
*Buffalo—Buffalo Clinic Laboratory; also hospital work	....	....	....	....	....	....	10,082
Clayton—Clayton Laboratory; also county work	....	....	....	....	....	307	1,222
*Cortland—Cortland Laboratory; also municipal and hospital work	....	....	....	....	....	....	1,282
Dobbs Ferry, New Rochelle, White Plains—von Wedel Laboratories	4,143	7,229	6,766	7,217	11,717	16,729	13,577
Endicott—Endicott-Johnson Laboratory; also municipal work	....	....	....	....	....	....	5,121
*Goshen—Goshen Laboratories, Inc	....	....	....	....	....	....	21
*Jamaica—Campbell Biological and Analytical Laboratory	....	....	....	....	....	....	1,780
Jamaica—Jamaica Laboratories; also county and private work	....	....	....	....	....	720	2,986
Liberty—Dr. J. Dworetzky Bacteriological Laboratory; also county work	....	....	....	....	....	....	2,384
Mamaroneck—Cappus Laboratories; also county, municipal and hospital work	....	....	....	2,213	2,726	8,015	23,160
Peekskill—Lent Clinical Laboratory	....	....	....	....	....	1,107	2,063
Rochester—Laboratory of Dr. Boswell	....	....	....	....	....	41	301
†Rochester—Medical Laboratory of Dr. G. W. O'Grady	....	....	....	....	....	1,067	3,569
*Rochester—Private Laboratory of Dr. M. L. Casey; also hospital work	....	....	....	....	....	....	206
†*Sayville—Dr. Francis A. Hulst Laboratory	....	....	....	....	....	....	4
Tuxedo Park—Tuxedo Laboratory; also municipal and hospital work	1,521	1,642	1,535	840	1,195	2,384	2,930
Watertown—Calkins and Farmer Laboratory; also county, municipal and hospital work	....	....	....	....	303	6,365	7,694
Watertown—Isabel M. Meader Laboratory; also hospital work	....	....	....	....	....	2,611	5,539
Yonkers—Sloan Laboratory	....	....	....	....	....	394	21
APPROVED LABORATORIES, NEW YORK CITY							
Clinical Laboratory of Dr. Frederic E. Sondern	....	....	....	....	....	960	904
Hortsman Laboratory (Fordham University Pharmacy Laboratory); also municipal and private work	....	....	....	....	....	65	897
Laboratory of the Hospital for Ruptured and Crippled; also private work	....	....	....	....	....	27	113
Physicians' Service Laboratory of Life Extension Institute	....	....	....	....	....	....	95,261
Plaza Analytical Laboratory	....	....	....	....	....	2,882	14,750
St. Mark's Clinical and X-Ray Laboratories	....	....	....	....	....	1,396	7,537
T. S. Winslow Laboratory	....	....	....	....	....	1,209	3,336

* Approved at various times during 1921; figures represent work performed since approval.

† Complete reports of work for 1921 not filed.

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SANITARY WATER EXAMINATIONS

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Bacterial:													
Central laboratory, Albany	1,056	1,564	2,131	2,800	2,017	1,091	1,447	1,852	1,189	1,140	11	1,030	1,122
Branch laboratory, New York City												148	39
Chemical:													
Central laboratory, Albany	646	1,097	1,850	2,400	2,507	703	661	626	532	541	455	533	619

The decrease in the number of sanitary analyses since 1914 is due to the fact that careful field inspections on all samples of water sent to the laboratory for examination were then required for the first time.

ANALYTICAL RESULTS OF SAMPLES OF WATER OBTAINED FROM PUBLIC SUPPLIES OR SUPPLIES USED BY PUBLIC INSTITUTIONS

(Results in parts per Million)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS — Free ammonia	Albuminoid ammonia	Nitrites	Nitrates	Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C. 37° C.	20° C.	B. COLI TYPE (+ = PRESENT) (— = ABSENT) 10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Afton	Spring, public supply	2/25/21	.....	.....	.....	.....	.....	.....	2.00	.....	.....	.....	2	10	—	—	—	..
Afton	Tap at health officer's residence, public supply	2/25/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	50	—	—	—	..
Afton	Tap at R. R. station, public supply	2/25/21	0	0	.002	.018	Trace	.300	1.80	47.10	45.00	2.50	4	60	—	—	—	..
Albany	Tap at State Highway Commission, public supply	3/21/21	10	Trace	.010	.090	.002	.100	5.00	57.10	46.00	4.70	53	125	—	—	—	..
Albion (Western House of Refuge for Women)	Raw water basin	3/17/21	45	Trace	.014	.240	.002	2.00	11.80	169.00	155.00	17.00	180	700	+	—	—	..
Albion (Western House of Refuge for Women)	Tap in Administration Building	3/17/21	45	0	.002	.318	.001	1.20	8.00	162.50	152.00	24.00	52	750	+	—	—	..
Alexandria Bay	Tap at garage from main stand pipe, untreated water, public supply	9/24/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32,500	.....	+	+	—	..
Alexandria Bay	Tap at Hotel St. Lawrence, untreated water, public supply	9/24/21	0	0	.004	.082	.002	.020	9.30	105.80	95.00	2.80	42,000	70,000	+	+	—	..
Alexandria Bay	Tap at Cook & Co.'s Drug Store, untreated water, public supply	9/24/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	120	4,600	—	—	—	..
Alfred	Reservoir, public supply	9/12/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18,500	11,500	+	+	+	..
Alfred	Tap, public supply	9/12/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,400	1,500	—	—	—	..
Amagansett	Well, public supply	8/10/21	0	0	.002	.002	.001	4.00	19.50	38.00	10.00	.30	1	150	—	—	—	..
Amsterdam	Han's Creek at intake, public supply	4/21/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80	100	+	—	—	..
Amsterdam	Tap at diverting dam, intake, public supply	4/21/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	120	600	—	—	—	..
Amsterdam	Tap at Sanford Building, public supply	4/21/21	50	0	.008	.120	.002	.160	0.80	17.60	4.00	10.30	110	550	+	—	—	..
Amsterdam	Tap at Wilson's Drug Store, public supply	4/21/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	95	600	—	—	—	..
Andes	Spring No. 2, public supply	10/31/21	0	Trace	.006	.032	.007	.400	1.20	23.40	16.00	1.10	14,000	.....	—	—	—	..
Andes	Spring No. 3, public supply	10/31/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23,000	10,500	+	+	—	..
Andes	Reservoir, springs Nos. 1-2, public supply	10/31/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,000	1,100	—	—	—	..
Andes	Tap at hotel, public supply	10/31/21	0	0	.004	.010	.005	.300	.80	22.10	16.00	.70	650	7,700	—	—	—	..
Andes	Spring at railroad	10/31/21	0	0	.004	.014	.008	.200	.40	23.40	20.00	.70	40,000	.....	+	—	—	..
Angelica	Spring, public supply	4/21/21	0	Trace	.002	.016	Trace	.600	2.00	67.90	51.00	1.60	600	6,300	+	+	—	..
Angelica	Tap at R. R. station, public supply	4/21/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	10	—	—	—	..

Angelica	Tap at R. R., well, public supply	4/21/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27	600	+	—	—	..
Antwerp	Indian River, public supply	9/23/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,900	16,000	+	+	+	..
Antwerp	Tap at drug store, chlorinated, unfiltered water, public supply	9/23/21	22	0	.010	.194	.001	.020	.80	67.10	65.00	13.20	4,700	19,000	+	—	—	..
Antwerp	Tap at Kimmey's, chlorinated water, public supply	9/23/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13,000	.....	+	+	—	..
Antwerp	Tap on hose at Odd Fellows Hall, chlorinated water, public supply	9/23/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,600	.....	+	+	—	..
Arcade	Well, proposed auxiliary, public supply	12/ 3/21	0	0	.034	.072	Trace	.300	4.60	122.80	110.00	1.40	3,900	170,000	—	—	—	..
Arkport	Intake at creek, public supply	4/22/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,000	19,000	—	—	—	..
Arkport	Tap at R. R. Station, public supply	4/22/21	0	0	.006	.038	Trace	.200	1.60	121.40	104.00	1.70	2	130	—	—	—	..
Arkville	Tap at Weber's studio, public supply	10/28/21	Trace	0	.002	.022	Trace	.300	.40	28.60	16.00	1.60	8	150	—	—	—	..
Arkville	Tap at hotel, public supply	10/28/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	140	—	—	—	..
Bainbridge	Wells, Milk Sugar Co., semi-public supply	2/26/21	0	0	.002	.010	Trace	.500	3.10	61.40	56.00	1.30	9	80	—	—	—	..
Bainbridge	Raw, Yaleville, public supply	2/26/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	85	100	+	+	—	..
Bainbridge	Filtered, Yaleville, public supply	2/26/21	0	0	.006	.028	.000	.200	1.90	22.10	20.00	2.50	100	125	—	—	—	..
Bainbridge	Tap at Newton, filtered water, public supply	2/26/21	15	0	.010	.036	Trace	.200	1.90	18.20	15.00	3.00	80	150	+	—	—	..
Baldwinsville	Tap at pump house, untreated water, public supply	9/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17,500	41,000	—	—	—	..
Baldwinsville	Tap on hose from Seneca garage, water from big well, public supply	9/27/21	0	0	.002	.014	.001	2.00	9.60	264.50	195.00	1.40	30	110	—	—	—	..
Baldwinsville	Tap at Larkin's store, untreated water, public supply	9/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24,000	11,500	—	—	—	..
Batavia (State School for the Blind)	Tap	3/22/21	0	0	.010	.060	.002	.600	3.80	114.20	108.00	2.80	4	5	—	—	—	..
Batavia (State School for the Blind)	General supply	3/22/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	1,400	—	—	—	..
Batavia (State School for the Blind)	Tank supply	3/22/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	450	—	—	—	..
Batavia	Raw water, public supply	4/16/21	15	15	.008	.108	.008	.300	3.50	157.20	127.00	3.20	2,900	2,300	+	+	+	..
Batavia	Filtered but not chlorinated water, public supply	4/16/21	0	0	.006	.078	Trace	.300	3.40	162.80	130.00	2.60	130	750	+	+	+	..
Batavia	Filtered and chlorinated water, public supply	4/16/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18	4	—	—	—	..
Batavia	Tap, public supply	4/16/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	3	—	—	—	..
Batavia	Well at R. R	4/16/21	0	10	1.490	.220	.003	Trace	96.00	286.00	.....	29.00	0	5	—	—	—	..
Batavia	Tap at water cooler, N. Y. C. R. R	4/16/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,600	5,800	—	—	—	..
Bath	Tap at pumping station, public supply	4/16/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17,000	57,000	+	—	—	..
Bath	Tap, public supply	4/16/21	0	0	.002	.044	Trace	.700	4.40	162.80	155.50	2.90	1,600	1,100	—	—	—	..
Beacon (State Hospital)	Fishkill Creek above Fishkill village	4/16/21	15	0	.012	.112	Trace	.160	1.80	80.60	76.00	2.20	3,100	3,200	+	—	—	..
Beacon (State Hospital)	Creek tributary to Fishkill Creek, one mile below Fishkill village	4/16/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,700	3,000	+	+	+	..
Beacon (State Hospital)	Fishkill Creek at test pit	4/16/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	450	750	+	+	—	..
Beacon (State Hospital)	Fishkill Creek above bridge at Wolcottville	4/16/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14,000	5,500	+	—	—	..
Beacon (State Hospital)	Tap at store room	4/16/21	0	0	.012	.044	Trace	.600	14.40	643.00	205.00	.60	5	15	—	—	—	..
Beacon	Reservoir at Mt. Beacon, public supply	7/13/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	350	1,300	+	+	+	..
Beacon	Tap, Mulzinga supply, public supply	7/13/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	100	—	—	—	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS —				Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C.		B. COLI TYPE (+ = PRESENT) (— = ABSENT)			
					Free ammonia	Albuminoid ammonia	Nitrites	Nitrates					37° C.	20° C.	10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Beacon	Tap at Green's Drug Store, public supply	7/13/21	20	10	.004	.072	.002	.040	2.20	22.10	16.50	2.80	500	2,300	+	+	—	..
Beacon	Raw Fishkill Creek water at intake, public supply	11/16/21	....	....	....	....	....	....	....	....	....	....	500	5,500	+	+	+	..
Beacon	Tap at pumping station, chlorinated water, public supply	11/16/21	....	....	....	....	....	....	....	....	....	....	36	1,400	+	+	—	..
Bedford Hills (N. Y. State Reformatory for Women)	Tap at store-house	4/15/21	0	0	.004	.002	.003	.240	4.90	80.00	61.50	1.90	2	25	—	—	—	..
Bergen	Wells at pumping station, public supply	3/22/21	0	0	.002	.074	Trace	1.00	7.40	175.50	170.00	2.90	600	1,200	—	—	—	..
Bergen	Tap at R. R. station, public supply	3/22/21	....	....	....	....	....	....	....	....	....	....	1	5	—	—	—	..
Berlin	Reservoir at Kendall Pond, public supply	11/30/21	Trace	0	.014	.120	.001	.060	2.80	18.20	16.00	5.80	6	50	+	—	—	..
Bolivar	Drilled wells at Water Works, public supply	9/ 9/21	0	Trace	.008	.020	.001	.020	12.60	97.20	132.50	3.00	6,400	115,000	—	—	—	..
Bolivar	Wells and springs combined, public supply	9/ 9/21	0	0	.004	.014	.001	.020	13.80	94.20	123.00	2.50	25,000	50,000	—	—	—	..
Boonville	Raw water, public supply	9/15/21	....	....	....	....	....	....	....	....	....	....	50	100	+	+	—	..
Boonville	Chlorinated water from pump discharge, public supply	9/15/21	....	....	....	....	....	....	....	....	....	....	33	45	—	—	—	..
Boonville	Tap at water office, public supply	9/15/21	....	....	....	....	....	....	....	....	....	....	17,200	18,000	+	+	—	..
Boonville	Tap at American House, public supply	9/15/21	60	5	.022	.194	.002	.100	4.00	27.30	26.00	12.50	42	45	—	—	—	..
Boonville	Tap at water office, public supply	10/21/21	15	5	.002	.082	.002	.140	9.00	100.00	84.00	3.20	400	350	+	+	—	..
Boonville	Tap at Dr. Douglas' office, public supply	10/21/21	....	....	....	....	....	....	....	....	....	....	140	600	+	+	+	..
Boonville	Tap at American House, public supply	10/21/21	....	....	....	....	....	....	....	....	....	....	300	400	+	+	—	..
Briarcliff Manor	Well No. 1, public supply	9/ 3/21	....	....	....	....	....	....	18.00	....	....	....	130,000	89,000	—	—	—	..
Briarcliff Manor	Well No. 2, public supply	9/ 3/21	....	....	....	....	....	....	5.00	....	....	....	130,000	108,500	—	—	—	..
Briarcliff Manor	Well No. 3, public supply	9/ 3/21	....	....	....	....	....	....	5.00	....	....	....	35,000	42,500	—	—	—	..
Briarcliff Manor	Well No. 4, public supply	9/ 3/21	....	....	....	....	....	....	5.00	....	....	....	220,000	261,000	+	+	—	..
Briarcliff Manor	Well No. 5, public supply	9/ 3/21	....	....	....	....	....	....	5.00	....	....	....	41,000	47,000	—	—	—	..
Briarcliff Manor	Well No. 6, public supply	9/ 3/21	....	....	....	....	....	....	5.00	....	....	....	56,000	57,500	—	—	—	..
Briarcliff Manor	Well No. 7, public supply	9/ 3/21	....	....	....	....	....	....	5.50	....	....	....	81,000	87,000	—	—	—	..
Briarcliff Manor	Well No. 8, public supply	9/ 3/21	....	....	....	....	....	....	8.00	....	....	....	8,000	8,500	—	—	—	..
Briarcliff Manor	Well No. 9, public supply	9/ 3/21	....	....	....	....	....	....	15.00	....	....	....	7,900	8,300	—	—	—	..
Briarcliff Manor	Brook ½ mile north of pumping station, public supply	9/ 3/21		5	.062	.114	.003	.060	4.50	31.20	26.50	4.80	96,000	11,500	+	—	—	..

Briarcliff Manor	Brook near pump house, public supply	9/ 3/21	....	....	....	....	....	....	....	....	....	....	2,600	3,700	+	—	—	..
Briarcliff Manor	General supply, public supply	9/ 3/21	0	0	.010	.014	.000	.020	4.20	104.20	80.50	2.50	....	....	....	....	....	..
Bridgehampton	Tap at Water Co's. office, public supply	8/10/21	....	....	....	....	....	....	....	....	....	....	43	1,600	—	—	—	..
Bridgehampton	Tap at R. R. station, public supply	8/10/21	0	0	.098	.020	Trace	4.80	18.50	35.10	6.50	1.00	2	45	—	—	—	..
Bridgehampton	Tap at R. R. tank, public supply	8/10/21	....	....	....	....	....	....	....	....	....	....	2	350	—	—	—	..
Brocton	New reservoir at spillway, public supply	4/11/21	35	20	.014	.098	.002	.080	3.40	47.10	40.00	7.50	....	....	....	....	....	..
Brocton	Burr reservoir, public supply	4/11/21	....	....	....	....	....	....	....	....	....	....	16	30,000	—	—	—	..
Brocton	West branch leading into Burr reservoir, public supply	4/11/21	....	....	....	....	....	....	....	....	....	....	24	21,000	—	—	—	..
Brocton	Tap at drug store, public supply	4/11/21	....	....	....	....	....	....	....	....	....	....	100	15	—	—	—	..
Brocton	Tap at school house, public supply	4/11/21	....	....	....	....	....	....	....	....	....	....	150	2,500	—	—	—	..
Brocton	Tap at Penn. depot, public supply	4/11/21	....	....	....	....	....	....	....	....	....	....	2,100	3,000	—	—	—	..
Brownsville	Spring, proposed supply, public supply	7/28/21	30	5	.010	.246	.004	.080	8.20	149.50	136.00	6.55	8,300	28,000	+	+	—	..
Buffalo	Raw water, public supply	4/ 2/21	....	....	....	....	....	....	....	....	....	....	0	....	—	—	—	..
Buffalo	Tap, public supply	4/ 2/21	Trace	5	.002	.074	.001	.060	12.20	94.20	94.00	4.70	7	15	—	—	—	..
Buffalo	Tap at pumping station, Massachusetts Ave., public supply	8/13/21	....	....	....	....	....	....	....	....	....	....	5,700	6,400	—	—	—	..
Buffalo	Tap at pumping station, Porter Ave., public supply	8/13/21	....	....	....	....	....	....	....	....	....	....	6,500	7,300	—	—	—	..
Buffalo	Tap at Bureau of Laboratories, public supply	8/13/21	Trace	5	.002	.100	.001	.040	11.00	108.60	106.00	2.90	22,000	13,500	—	—	—	..
Cadosia	Tap at Post Office, public supply	10/29/21	0	0	.002	.006	.000	.300	.90	42.90	41.00	.90	2	25	—	—	—	..
Cadosia	Tap at Penny's spring, public supply	10/29/21	0	0	.002	.002	.000	.200	1.00	35.10	33.00	.70	0	10	+	—	—	..
Cadosia	Spring, public supply	10/29/21	....	....	....	....	....	....	....	....	....	....	0	0	—	—	—	..
Cadosia	Tap at R. R. restaurant, public supply	10/29/21	0	0	.012	.066	.000	.060	.80	27.30	16.00	1.50	2	35	+	—	—	..
Cadosia	Tap near water tank used by trainmen	10/29/21	0	0	.002	.002	.000	.060	.90	52.90	52.00	.60	0	0	—	—	—	..
Cairo	Stream used as an auxiliary supply, public supply	4/13/21	....	....	....	....	....	....	....	....	....	....	140	600	—	—	—	..
Cairo	Tap, public supply	4/13/21	7	10	.010	.082	.001	.060	2.20	14.30	11.00	4.40	45	170	—	—	—	..
Camden	Tap at Dr. Allison's residence, public supply	3/24/21	....	....	....	....	....	....	....	....	....	....	49	100	—	—	—	..
Camden	Tap at Mrs. E. H. Conant's residence, public supply	3/24/21	....	....	....	....	....	....	....	....	....	....	9	70	—	—	—	..
Camden	Tap at Camden Creamery, public supply	3/24/21	....	....	....	....	....	....	....	....	....	....	19	130	—	—	—	..
Camden	Tap at American House, public supply	3/24/21	....	....	....	....	....	....	....	....	....	....	29	50	—	—	—	..
Canaseraga	Tap, publics upply	4/25/21	0	0	.002	.020	Trace	.200	1.80	169.00	145.00	1.60	1	5	—	—	—	..
Canastota	Raw water, public supply	3/15/21	....	....	....	....	....	....	....	....	....	....	25,500	17,500	—	—	—	..
Candor	Well, public supply	2/14/21	0	0	.002	.016	Trace	.300	2.00	29.90	25.00	1.80	2	5	—	—	—	..
Candor	Springs, public supply	2/14/21	Trace	5	.002	.026	.005	.100	1.80	20.80	20.00	2.90	2	35	—	—	—	..
Cape Vincent	Tap at pumping station, public supply	4/16/21	....	....	....	....	....	....	....	....	....	....	10	350	+	—	—	..
Cape Vincent	Tap, public supply	4/16/21	0	Trace	.002	.072	.002	.160	12.30	97.20	90.00	2.80	180	600	+	—	—	..
Castile	Tap, public supply	9/28/21	Trace	0	.004	.026	.001	.700	3.60	131.40	128.00	2.80	8	40	+	—	—	..
Town of Castorland	Meadow Brook, public supply	9/22/21	0	0	.014	.064	.002	.200	1.80	214.50	169.00	2.20	600	800	+	+	—	..
Catskill	Raw water at intake, public supply	4/ 5/21	....	....	....	....	....	....	....	....	....	....	325	3,300	+	+	+	..
Catskill	Chlorinated water at reservoir, public supply	4/ 5/21	....	....	....	....	....	....	....	....	....	....	60	1,000	+	+	+	..
Catskill	Tap, public supply	4/ 5/21	20	50	.026	.124	.004	.700	3.50	37.70	32.00	6.50	90	2,500	+	+	+	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	Nitrogen as —				Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	Bacteria per c. c.		B. Coli Type (+ = present) (— = absent)			
					Free ammonia	Albuminoid ammonia	Nitrites	Nitrates					37° C.	20° C.	10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Catskill	Drinking fountain, Boughton spring, semi-public supply	4/ 5/21	Trace	0	.002	.008	Trace	.800	4.40	131.40	108.00	2.80	18	70	—	—	—	..
Catskill	Spring in village, public supply	9/10/21	....	....	....	....	....	....	....	....	....	....	600	2,200	+	+	—	..
Catskill	Raw water at pumping station, public supply	9/10/21	....	....	....	....	....	....	....	....	....	....	186,000	460,000	+	+	—	..
Catskill	Tap at reservoir, treated water, public supply	9/10/21	35	5	.028	.142	.002	.120	7.40	65.70	64.00	10.50	265,000	600,000	—	—	—	..
Catskill	Tap at pumping station, treated water, public supply	9/10/21	....	....	....	....	....	....	....	....	....	....	9,000	40,000	—	—	—	..
Central Islip (State Hospital)	New deep well, at North Colony	4/14/21	0	0	.004	.002	.000	.020	5.20	9.50	7.00	.60	1	20	—	—	—	..
Central Islip (State Hospital)	General supply	4/14/21	0	0	.002	.060	.000	.400	13.00	54.30	7.00	1.40	1	10	—	—	—	..
Central Valley	Earle Pond, public supply	3/17/21	....	....	....	....	....	....	....	....	....	....	21	50	+	—	—	..
Central Valley	Tap, public supply	3/17/21	0	0	.030	.132	.003	Trace	2.60	20.80	15.00	2.00	25	220	—	—	—	..
Cherry Valley	Spring reservoir, public supply	5/12/21	....	....	....	....	....	....	....	....	....	....	35	45	—	—	—	..
Cherry Valley	Overflow of mineral spring, public supply	5/12/21	....	....	....	....	....	....	....	....	....	....	5	7	—	—	—	..
Cherry Valley	Public fountain mineral spring, public supply	5/12/21	0	0	.308	.026	Trace	.020	9.80	55.50	....	2.10	7	6	—	—	—	..
Cherry Valley	Tap at main reservoir, public supply	5/12/21	....	....	....	....	....	....	....	....	....	....	50	130	+	—	—	..
Cherry Valley	Tap at hotel, public supply	5/12/21	15	8	.004	.066	.001	.020	1.20	91.40	85.00	3.80	12	50	—	—	—	..
Chester	Tap, public supply	3/22/21	5	0	.008	.106	.001	.020	3.00	29.90	27.00	4.10	6	2,300	—	—	—	..
Chester	Tap, public supply	7/28/21	0	0	.002	.128	.001	.020	4.40	18.90	15.00	2.70	9,700	42,000	—	—	—	..
Cold Spring	Overflow from pond above reservoir, public supply	3/17/21	....	....	....	....	....	....	....	....	....	....	26	120	—	—	—	..
Cold Spring	Overflow from reservoir, public supply	3/17/21	....	....	....	....	....	....	....	....	....	....	65	850	+	—	—	..
Cold Spring	Tap, public supply	3/17/21	10	5	.002	.056	Trace	Trace	1.80	61.40	52.00	2.80	24	1,300	—	—	—	..
Collins (Gowanda State Hosp.)	Bartlett Hollow Bridge, north branch Clear Creek, two miles southwest of Marshfield	1/10/21	....	....	....	....	....	....	....	....	....	....	28,000	....	+	+	—	..
Collins (Gowanda State Hosp.)	North branch Clear Creek, Gowanda Water Co., water supply at bridge, one-half mile south of Marshfield	1/10/21	....	....	....	....	....	....	....	....	....	....	1,200	96,000	+	—	—	..

Collins (Gowanda State Hosp.)	North branch Clear Creek, Gowanda water supply at bridge, one-half mile west of Marshfield	1/10/21	....	....	....	....	....	....	....	....	....	....	63,000	145,000	+	+	+	..
Collins (Gowanda State Hosp.)	Test well at Willard White Farm	1/18/21	5	15	.334	.026	.008	Trace	1.80	350.00	186.00	1.70	....	....	....	....	....	..
Town of Colonie	Tap at coach yard, D. & H. Shops	4/27/21	....	....	....	....	....	....	....	....	....	....	26	60	+	−	−	..
Town of Colonie	Tap at power house, D. & H. Shops, public supply	4/27/21	0	Trace	.028	.038	.005	.600	14.60	335.50	184.00	1.10	49	160	+	+	−	..
Town of Colonie	Tap at D. & H. Shops, Watervliet, public supply	10/ 7/21	0	0	.008	.104	.001	.180	3.60	115.80	101.50	3.50	28	40	+	+	−	..
Town of Colonie	Dug well, discharge from pump	10/ 7/21	....	....	....	....	....	....	22.00	....	....	....	34	150	+	−	−	..
Town of Colonie	Tap for filling tanks or cars	10/ 7/21	0	Trace	.040	.380	.001	.120	3.60	115.80	98.00	3.40	36	90	+	+	−	..
Town of Colonie	Tap at car department at D. & H. Shops, Hudson River water, public supply	10/ 7/21	....	....	....	....	....	....	....	....	....	....	1,600	4,800	+	+	+	..
Comstock (Gt. Meadow Prison)	Tap, Dolph Pond supply	3/11/21	10	0	.050	.084	.002	.020	2.20	26.60	16.00	4.50	65	325	−	−	−	..
Comstock (Gt. Meadow Prison)	Artesian well	3/11/21	....	....	....	....	....	....	....	....	....	....	3	50	−	−	−	..
Cooks Falls	Spring supply, public supply	5/13/21	5	0	.004	.026	Trace	.040	.60	18.20	15.00	1.50	45	110	−	−	−	..
Cooks Falls	Home spring, public supply	5/13/21	....	....	....	....	....	....	1.50	....	....	....	2	5	−	−	−	..
Cooks Falls	Brook supply, public supply	5/13/21	0	0	.008	.040	Trace	.160	.60	12.70	11.00	2.75	90	750	+	+	−	..
Cooks Falls	Tap, public supply	5/13/21	....	....	....	....	....	....	....	....	....	....	28	200	+	+	−	..
Cooperstown	Tap, public supply	6/ 6/21	0	0	.002	.130	.002	.100	2.00	94.20	94.00	2.90	16	750	−	−	−	..
Corinth	Spring in public park	7/13/21	0	0	.002	.024	.001	2.00	4.60	188.50	177.00	.70	59,000	26,000	−	−	−	..
Croton-on-the-Hudson	Tap at pumping station, public supply	10/ 8/21	....	....	....	....	....	....	....	....	....	....	4,400	7,700	−	−	−	..
Croton-on-the-Hudson	Tap at First National Bank, untreated water, public supply	10/ 8/21	....	....	....	....	....	....	....	....	....	....	1	1	−	−	−	..
Croton-on-the-Hudson	Tap at Dr. Miller's office, public supply	10/ 8/21	0	0	.010	.072	.002	.060	3.30	80.00	74.00	1.80	240	130	−	−	−	..
De Kalb	Creek, public supply	8/31/21	15	50	.002	.586	.002	.020	17.50	243.00	189.00	43.00	....	....	....	....	....	..
Delancey	Tap, public supply	5/12/21	5	0	.002	.060	Trace	.040	0.30	15.60	8.50	2.10	550	1,600	+	+	−	..
Delanson	Lower reservoir, public supply	5/11/21	....	....	....	....	....	....	....	....	....	....	76	250	−	−	−	..
Delanson	Upper reservoir, public supply	5/11/21	....	....	....	....	....	....	....	....	....	....	300	700	+	−	−	..
Delanson	Overflow from upper reservoir at lower reservoir, public supply	5/11/21	....	....	....	....	....	....	....	....	....	....	240	950	+	+	−	..
Delanson	Tap, outside R. R. station	5/11/21	....	....	....	....	....	....	....	....	....	....	67	210	−	−	−	..
Delanson	Tap at Green House, public supply	5/11/21	30	8	.014	.204	.003	.160	1.80	33.10	5.00	5.40	50	110	−	−	−	..
Delhi	Tap, public supply	5/12/21	Trace	Trace	.002	.062	.001	.020	0.40	27.30	25.00	2.60	1,000	1,100	+	−	−	..
Delmar	Tap, public supply	12/ 6/21	....	....	....	....	....	....	....	....	....	....	60	275	+	+	−	..
Dolgeville	Overflow of reservoir, public supply	4/25/21	....	....	....	....	....	....	....	....	....	....	600	19,000	−	−	−	..
Dolgeville	Tap at Breckwaldt & Co.'s Factory, public supply	4/25/21	....	....	....	....	....	....	....	....	....	....	20	1,300	−	−	−	..
Dolgeville	Tap at Dr. Strobel's residence, public supply	4/25/21	20	0	.002	.076	.001	.100	2.30	24.00	22.50	3.90	46	9,800	−	−	−	..
Downsville	Smith spring, public supply	5/13/21	....	....	....	....	....	....	2.50	....	....	....	1,500	750	+	+	+	..
Downsville	Holmes spring, public supply	5/13/21	....	....	....	....	....	....	1.00	....	....	....	10	40	−	−	−	..
Downsville	Inlet pipe reservoir, public supply	5/13/21	....	....	....	....	....	....	....	....	....	....	350	8,200	+	+	−	..
Downsville	Tap, public supply	5/13/21	0	5	.004	.072	Trace	0.20	1.40	15.60	9.00	2.80	75	300	+	+	−	..
Dryden	Upper spring, public supply	6/ 2/21	0	0	.004	.002	.001	1.20	1.70	136.50	124.00	.60	1,200	210,000	−	−	−	..
Dryden	Lower spring, public supply	6/ 2/21	0	0	.002	.006	.001	1.20	2.00	155.00	136.00	.65	6,500	180,000	+	−	−	..
Dryden	Tap, public supply	6/ 2/21	....	....	....	....	....	....	....	....	....	....	9,100	14,000	+	−	−	..
Dryden	Scofield spring, public supply	6/ 2/21	....	....	....	....	....	....	3.00	....	....	....	13,000	110,000	+	−	−	..
Dryden	Creamery well	6/ 2/21	....	....	....	....	....	....	3.00	....	....	....	1	10	−	−	−	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS —				Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C.		B. COLI TYPE (+ = PRESENT) (— = ABSENT)			
					Free ammonia	Albuminoid ammonia	Nitrites	Nitrates					37° C.	20° C.	10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Dunkirk	Raw water, public supply	6/ 9/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	100	—	—	—	..
Dunkirk	Pump, discharge water, chlorinated, public supply	6/ 9/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,500	1,500	—	—	—	..
Dunkirk	Tap, public supply	6/ 9/21	0	Trace	.002	.088	.002	.060	11.00	100.00	95.00	1.60	180	300	—	—	—	..
Earlville	Borden's milk spring	2/25/21	.....	.....	.....	.....	.....	.....	1.50	.....	.....	.....	3	550	—	—	—	..
Earlville	Stream above reservoir, public supply	2/25/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36	900	—	—	—	..
Earlville	Tap at house, public supply	2/25/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24	250	—	—	—	..
Earlville	Tap at R. R. station, public supply	2/25/21	5	3	.002	.070	Trace	.100	3.20	35.10	35.00	2.70	1	170	—	—	—	..
Earlville	Tap before chlorination, public supply	9/17/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	600	800	+	+	—	..
Earlville	Reservoir, public supply	9/17/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	425	.....	—	—	—	..
Earlville	Tap at pumping station, chlorinated water, public supply	9/17/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	10	—	—	—	..
Earlville	Tap, chlorinated water, public supply	9/17/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	375	450	+	—	—	..
East Aurora	Well, public supply	9/ 1/21	0	0	.008	.016	.010	4.00	10.70	410.00	279.00	1.50	670	970	+	—	—	..
East Aurora	Tap in kitchen, public supply	9/ 1/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,200	1,270	+	—	—	..
East Aurora	Tap in paint shop, public supply	9/ 1/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,850	2,850	+	—	—	..
East Aurora	Tap at Pine Street pumping station, public supply	10/27/21	10	Trace	.018	.030	Trace	.060	3.00	257.00	207.00	2.10	2	10	—	—	—	..
East Aurora	South Street pumping station, public supply	10/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	45	—	—	—	..
East Aurora	Tap at South Station, public supply	10/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	220	600	—	—	—	..
East Aurora	Tap at Pine Station, public supply	10/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5	—	—	—	..
East Randolph	Collecting basin, public supply	5/20/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	95	1,800	+	—	—	..
East Randolph	Tap, public supply	5/20/21	0	0	.002	.012	.001	.700	1.80	97.20	93.00	2.40	2	20	—	—	—	..
Ellenville	Maratauza Lake at Sam's Point, 150 yards from shore	10/29/21	5	4	.042	.072	.007	.040	.80	19.50	10.00	1.20	.....	.....	..	..	..	..
Ellenville	Maratauza Lake, 150 yards from shore	10/29/21	10	4	.022	.050	.005	.200	.80	20.80	9.00	1.10	.....	.....	..	..	..	..
Ellenville	Tap at hotel, public supply	10/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	23	—	—	—	..
Ellenville	Tap at garage, behind hotel, public supply	11/ 4/21	Trace	0	.006	.022	.000	.040	1.20	40.30	40.00	1.60	.....	.....	..	..	..	..
Ellenville	South Gulley, public supply	11/ 4/21	Trace	0	.002	.028	.000	.020	4.00	33.80	33.00	1.40	2	0	—	—	—	..
Ellenville	Fontainekill above cemetery	11/ 4/21	Trace	0	.022	.052	.000	.040	1.90	28.60	26.00	1.60	31	100	—	—	—	..

Ellenville	Marataussa Lake at Sam's Point	11/ 4/21	0	5	.012	.068	Trace	.020	1.80	14.30	12.00	3.10	1	35	—	—	—
Ellenville	Emergency dug well	11/ 4/21	....	....	....	....	....	....	....	....	....	....	21	110	+	—	—
Ellenville	Marataussa Lake, 200 feet from camp site	11/ 4/21	....	....	....	....	....	....	....	....	....	....	4	35	+	—	—
Elmira (State Reformatory)	p ing	6/ 9/21	0	0	.002	.040	Trace	4.00	5.90	75.70	53.00	1.30	33,000	40,009	—	—	—
Essex	Tap, public supply	7/13/21	15	5	.002	.096	.002	.140	2.60	43.60	41.50	4.20	400	3,200	—	—	—
Farmingdale	Driven well at Tagg residence, public supply	1/ 7/21	5	10	.004	.024	.010	.400	4.10	55.70	20.00	1.10	....	....	....	....	....
Fleischmanns	Spring A, Paul Lufer, owner, possible auxiliary public supply	6/ 7/21	0	Trace	.106	.052	.001	.060	.60	14.30	9.00	1.90	32	325	—	—	—
Fleischmanns	Spring B-1, at open ditch, possible auxiliary public supply	6/ 7/21	0	0	.006	.006	.001	.200	1.00	18.20	14.00	1.00	46	425	+	+	—
Fleischmanns	Spring B-2, at open ditch, possible auxiliary public supply	6/ 7/21	....	....	....	....	....	....	1.50	....	....	....	1	15	—	—	—
Fleischmanns	Spring B-3, at open ditch, possible auxiliary public supply	6/ 7/21	....	....	....	....	....	....	....	....	....	....	26	210	+	+	—
Fleischmanns	Emery Brook, at pump, public supply	7/ 9/21	0	0	.008	.030	.000	.140	1.40	20.20	16.00	1.10	87,000	88,000	+	+	+
Fleischmanns	Spring on Lasher's flat, public supply	7/ 9/21	....	....	....	....	....	....	3.00	....	....	....	26,500	98,009	+	+	—
Fleischmanns	Dump Spring	7/ 9/21	....	....	....	....	....	....	3.50	....	....	....	38,500	40,000	—	—	—
Fleischmanns	Rock Spring	7/ 9/21	....	....	....	....	....	....	3.50	....	....	....	15,000	100,000	+	—	—
Fleischmanns	Tap at Dr. Champlin's office, public supply	7/ 9/21	....	....	....	....	....	....	....	....	....	....	5,300	4,700	—	—	—
Fleischmanns	Open ditch	7/ 9/21	....	....	....	....	....	....	....	....	....	....	10,000	7,000	+	+	+
Fleischmanns	Pipe line leading to main for auxiliary supply, chlorinated water, public supply	7/ 9/21	0	Trace	.012	.056	.001	.240	.60	19.50	18.00	2.40	8	1	—	—	—
Fleischmanns	Tap, public supply	7/ 9/21	....	....	....	....	....	....	....	....	....	....	8,500	33,500	—	—	—
Fort Ticonderoga	Lake Champlain	3/ 1/21	8	5	.002	.082	.001	.040	4.40	31.20	30.00	6.50	....	....	....	....	....
Fultonville	Dug well, out of use	8/27/21	....	....	....	....	....	....	24.00	....	....	....	4,000	11,000	+	+	—
Fultonville	First tap, below reservoir, public supply	8/27/21	....	....	....	....	....	....	28.00	....	....	....	400	1,500	—	—	—
Fultonville	Tap, Starin, public supply	8/27/21	....	....	....	....	....	....	5.00	....	....	....	85,000	130,000	+	—	—
Fultonville	Tap, public supply	8/27/21	Trace	0	.640	.008	.003	.040	25.00	214.50	202.00	1.20	100	500	—	—	—
Fultonville	Van Epp's dam, near overflow, public supply	8/27/21	....	....	....	....	....	....	5.00	....	....	....	1,000	26,000	+	—	—
Fultonville	Tap pump discharge at new pump station, public supply	12/14/21	0	5	1.808	.060	.002	.400	180.00	243.00	184.00	1.70	8	15	—	—	—
Fultonville	Tap at old pump station	12/14/21	0	0	.864	.004	.001	1.60	31.00	221.50	198.00	1.50	1	0	—	—	—
Fultonville	Tap, public supply	12/14/21	....	....	....	....	....	....	....	....	....	....	3	0	—	—	—
Fultonville	Tap, Starin supply	12/14/21	....	....	....	....	....	....	....	....	....	....	1	10	—	—	—
Gilbertsville	Raw water, reservoir, public supply	3/30/21	10	5	.004	.098	Trace	Trace	1.60	22.10	14.00	3.30	75	200	—	—	—
Gilbertsville	Creek, public supply	3/30/21	....	....	....	....	....	....	....	....	....	....	170	450	+	+	—
Gilbertsville	Tap, public supply	3/30/21	5	0	.006	.064	.001	Trace	1.00	21.40	16.00	3.00	1	35	—	—	—
Gilboa	Water above new dam, Manorkill, public supply	7/ 1/21	....	....	....	....	....	....	....	....	....	....	30,000	110,000	+	+	+
Gilboa	Collecting basin, spring supply, public supply	7/ 1/21	....	....	....	....	....	....	....	....	....	....	24	425	+	+	+
Gilboa	Concrete reservoir, public supply	7/ 1/21	....	....	....	....	....	....	....	....	....	....	12,000	7,900	+	+	+

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS — Free ammonia	Albuminoid ammonia	Nitrites	Nitrates	Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C. 37° C.	20° C.	B. COLI TYPE (+ = PRESENT) (— = ABSENT) 10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Gilboa	Tap at garage, public supply	7/ 1/21											3,200	5,700	+	+	—	
Gilboa	Creek at intake pipe, public supply	7/11/21	0	Trace	.020	.058	.002	.060	1.00	36.40	34.00	1.00						
Gilboa	Spring at reservoir, delivery pipe, public supply	7/11/21	0	0	.002	.010	.002	.400	1.20	38.70	36.00	1.50						
Gloversville	Tap at Sewage Plant, public supply	4/22/21											30	160	—	—	—	
Gloversville	Overflow, north reservoir, Kingsboro supply	4/22/21											29	21,000	—	—	—	
Gloversville	Overflow of south reservoir, Kingsboro supply	4/22/21											9	5,600	—	—	—	
Gloversville	Tap, Kingsboro supply	4/22/21	0	0	.002	.014	Trace	.500	3.80	108.60	103.00	1.00	25	1,800	—	—	—	
Gloversville	Tap at Water Works, public supply	4/22/21	20	0	.008	.078	Trace	.040	.80	26.00	24.00	5.00	22	200	—	—	—	
Gloversville	Raw water, Rice Creek reservoir, public supply	5/24/21											17	12,500	+	+	—	
Gloversville	Tap at first farmhouse below chlorinated plant, public supply	5/24/21											6	41	—	—	—	
Gloversville	Tap at water office, chlorinated water, public supply	5/24/21	5	0	.006	.038	.001	.080	0.90	21.50	14.00	4.00	1	35	—	—	—	
Goshen	Tap at Dr. Hamilton's office, public supply	5/19/21	15	Trace	.018	.184	.001	.060	1.20	23.40	15.50	4.50	23,500	28,000	—	—	—	
Goshen	Tap at Glass' market, public supply	5/19/21											7,100	110,000	—	—	—	
Goshen	Tap at Dickens' store, public supply	5/19/21											6,900	9,300	—	—	—	
Goshen	Tap in Grade School building	5/19/21											2,100	3,100	+	+	+	
Goshen	Tap, public supply	7/21/21											1,200	2,000	—	—	—	
Goshen	Tap at Dr. Hamilton's office, public supply	7/21/21											2,200	1,700	—	—	—	
Gouverneur	Raw Oswegatchie River water	2/16/21											3,400	3	+	+	+	
Gouverneur	Tap at Dr. Sayer's office, public supply	2/16/21											19	1,300	—	—	—	
Gouverneur	Raw Oswegatchie River water	3/30/21											1,700	5,600	+	+	+	
Gouverneur	Chlorinated water from pump house, public supply	3/30/21											80	100	—	—	—	
Gouverneur	Tap, public supply	3/30/21											40	2,300	—	—	—	
Gouverneur	Raw Oswegatchie River water	10/11/21											150	200	+	+	+	

Gouverneur	Tap at Dr. Sayer's office, public supply	10/11/21	....	....	....	....	....	....	....	....	....	....	10	10	—	—	—	..
Granville	Raw water at intake, public supply	4/ 2/21	....	....	....	....	....	....	....	....	....	....	240	8,900	+	+	+	..
Granville	Tap at pumping station, public supply	4/ 2/21	....	....	....	....	....	....	....	....	....	....	110	1,700	+	—	—	..
Granville	Tap, public supply	4/ 2/21	15	30	.004	.088	.002	.400	72.80	42.90	40.00	4.70	150	6,600	+	+	+	..
Greenport	R. R. dug well	8/11/21	Trace	Trace	.002	.022	.010	12.00	110.00	81.00	5.00	6.50	1	10	—	—	—	..
Greenport	North well at woods	8/11/21	....	....	....	....	....	....	21.50	....	....	....	170	250,000	+	—	—	..
Greenport	Public fountain	8/11/21	....	....	....	....	....	....	....	....	....	....	1	15	—	—	—	..
Greenport	New well at main plant	8/11/21	....	....	....	....	....	....	540.00	....	....	....	1	20	—	—	—	..
Greenport	Tap at R. R. station, public supply	8/11/21	Trace	Trace	.028	.020	.002	2.00	490.00	101.80	8.00	2.40	1	20	—	—	—	..
Greenport	Well (1919) at electric pump	8/29/21	5	3	.028	.032	.002	.100	34.00	24.70	19.00	2.50	285	29,000	—	—	—	..
Greenport	Well (1920) near stand pipe	8/29/21	0	5	.030	.024	.002	2.40	630.00	101.50	17.00	3.50	80	190	—	—	—	..
Groton	Tap, public supply	2/ 4/21	....	....	....	....	....	....	....	....	....	....	18	800	+	—	—	..
Groton	Old supply, public supply	6/ 6/21	....	....	....	....	....	....	....	....	....	....	23,000	73,000	+	—	+	..
Groton	New supply, public supply	6/ 6/21	....	....	....	....	....	....	....	....	....	....	100	325	—	—	—	..
Groton	Combined system, public supply	6/ 6/21	20	0	.006	.124	.002	.400	1.80	114.20	114.00	4.60	475	1,600	+	—	—	..
Groton	North branch, public supply	8/22/21	....	....	....	....	....	....	....	....	....	....	15,100	9,800	+	+	—	..
Groton	South branch, public supply	8/22/21	....	....	....	....	....	....	....	....	....	....	9,000	11,400	+	+	+	..
Groton	Settling basin, public supply	8/22/21	....	....	....	....	....	....	....	....	....	....	27,600	32,000	+	+	+	..
Groton	Tap water in village, combined public supply	8/22/21	....	....	....	....	....	....	....	....	....	....	27	30	—	—	—	..
Town of Groveland	Spring No. 1, proposed public supply for Groveland Station	2/ 3/21	5	7	.064	.014	.002	Trace	5.20	285.50	260.00	1.90	50	....	+	—	—	..
Town of Groveland	Spring No. 2, proposed public supply for Groveland Station	2/ 3/21	Trace	50	.002	.034	.003	.016	7.00	257.00	249.00	3.00	180	....	+	+	—	..
Hamden	Tap, public supply	5/12/21	0	0	.002	.038	Trace	.020	0.40	16.90	16.00	1.85	325	900	+	+	—	..
Hammondsport	Intake pipe at Electric Light Co., public supply	8/ 9/21	....	....	....	....	....	....	....	....	....	....	600	3,900	—	—	—	..
Hammondsport	Well, public supply	8/ 9/21	0	0	.026	.006	.007	.600	8.20	131.40	125.00	1.60	700	4,000	—	—	—	..
Hammondsport	Keuka Lake, public supply	8/31/21	0	0	.012	.110	.002	.040	5.40	87.20	79.00	.60	4,000	4,200	—	—	—	..
Hammondsport	Tap at fire house, public supply	8/31/21	0	0	.012	.110	.002	.040	5.40	87.20	79.00	.60	60	200	—	—	—	
Hartwick	Barney Brook Basin, public supply	3/ 2/21	....	....	....	....	....	....	....	....	....	....	7	50	—	—	—	..
Hartwick	Willis spring, public supply	3/ 2/21	....	....	....	....	....	....	....	....	....	....	9	50	—	—	—	..
Hartwick	Reservoir public supply	3/ 2/21	....	....	....	....	....	....	....	....	....	....	15	40	—	—	—	..
Hartwick	Tap at R. R. station, public supply	3/ 2/21	20	0	.002	.126	Trace	.240	2.00	22.10	20.00	2.90	2	50	—	—	—	..
Hartwick	Otego Creek, public supply	10/ 3/21	Trace	5	.040	.106	.002	.160	1.80	65.70	63.00	2.65	28,000	24,000	—	—	—	..
Hicksville	Tap A, public supply	6/ 6/21	0	20	.526	.040	1.50	5.60	31.50	62.90	14.00	7.00	21	30	+	+	+	..
Hicksville	Tap B, public supply	6/ 6/21	....	....	....	....	....	....	....	....	....	....	1	5	—	—	—	..
Hicksville	Tap at pumping station, public supply	11/25/21	0	0	.042	.032	.003	7.00	28.00	42.90	22.00	2.10	0	0	—	—	—	..
Hicksville	Tap at Dr. Rave's office, public supply	11/25/21	0	0	.056	.024	.002	7.00	29.00	41.60	13.00	1.60	0	0	—	—	—	..
Hicksville	Tap at S. Wheeler's residence, public supply	11/22/21	....	....	....	....	....	....	....	....	....	....	0	0	—	—	—	..
Hobart	Raw, town brook, public supply	9/16/21	0	Trace	.010	.096	.002	.080	1.40	29.90	29.00	2.70	2,200	2,250	+	+	+	..
Hobart	Filtered, town brook public supply	9/16/21	0	0	.010	.060	.002	.500	1.80	33.80	31.00	1.60	15	70	—	—	—	..
Holley	Clarendon well at Holley Water Works, public supply	10/24/21	Trace	Trace	.002	.028	.003	2.40	5.60	221.50	188.00	2.10	11,500	....	+	+	+	..
Honoeye Falls	Well at pump house, not chlorinated	3/24/21	0	0	.002	.048	.003	8.00	25.00	273.00	235.00	2.70	130	1,400	+	+	+	..
Honoeye Falls	Stand pipe, chlorinated water, public supply	3/ 4/21	....	....	....	....	....	....	....	....	....	....	70	450	+	+	—	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS —				Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C.		B. COLI TYPE (+ = PRESENT) (— = ABSENT)			
					Free ammonia	Albuminoid ammonia	Nitrites	Nitrates					37° C.	20° C.	10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Honeoye Falls	Well Ba A	5/19/21						16.00	9.00				20	5	—	—	—	
Honeoye Falls	Well Ba A	5/19/21						16.00	9.00				10	10	—	—	—	
Honeoye Falls	Tank after chlorination, public supply	5/19/21						30.00	11.50				1	3	—	—	—	
Honeoye Falls	From line as water is chlorinated, public supply	5/19/21						20.00	10.50				1	0	—	—	—	
Honeoye Falls	Well of Fred Doussell	9/14/21							39.00				85,000	140,000	+	+	+	
Honeoye Falls	Untreated well water	9/14/21	0	Trace	.002	.028	.001	.100	6.60	190.00	128.00	.60	190,000	210,000	—	—	—	
Honeoye Falls	Treated water from mains, public supply	9/14/21											15	20	—	—	—	
Honeoye Falls	Tap at Dr. H. Benheim's residence, public supply	9/14/21											36,000	48,500	—	—	—	
Honeoye Falls	Tap at Harrick's Drug Store, public supply	9/14/21											240,000	310,000	—	—	—	
Honeoye Falls	Tap at Mr. Geo. Hubbell's residence, public supply	9/14/21											870	1,600	—	—	—	
Hoosick Falls	Tap, public supply	3/19/21	0	0	.004	.026	.002	.600	8.80	51.40	19.00	1.40	1	10	+	—	—	
Hoosick Falls	Tap, public supply	8/23/21	Trace	0	.002	.052	.001	.120	5.50	94.20	89.50	1.10	31	20	+	—	—	
Hornell	R. R. creek, public supply	4/26/21											18,000	9,800	+	+	+	
Hornell	Raw water at filter plant, public supply	4/26/21	10	17	.008	.120	.005	.300	3.00	70.20	60.50	4.20	500	350	—	—	—	
Hornell	Filtered water, public supply	4/26/21											80		—	—	—	
Hornell	Filtered and chlorinated water, public supply	4/26/21											3,900		—	—	—	
Hornell	Tap, public supply	4/26/21	15	5	.012	.112	Trace	.300	2.80	71.40	57.00	3.30	4,700	34,000	—	—	—	
Hornell	Reservoir, public supply	8/16/21	Trace	20	.208	.232	.015	.080	2.60	108.60	99.00	5.90	450	2,000	+	—	—	
Hornell	Tap at filter plant, filtered, public supply	8/16/21											120	1,100	+	—	—	
Hornell	Tap at 108 Broadway, filtered and chlorinated water, public supply	8/16/21	15	10	.008	.122	.002	.200	3.00	107.20	98.00	5.00	160	5,400	—	—	—	
Hudson	Raw water, public supply	12/23/21											70	150	+	+	—	
Hudson	Filtered water, public supply	12/23/21	15	0	.006	.078	Trace	.100	2.20	40.30	10.00	3.50	21	35	+	—	—	
Hunter	Tap, public supply	6/10/21	0	0	.006	.032	.003	.100	.60	16.90	9.00	.90	44	90	—	—	—	
Huntington	Tap at pumping station, public supply	8/11/21											110	500	—	—	—	
Huntington	Tap at Water Dept. Office, public supply	8/11/21											220	850	—	—	—	
Huntington	Tap at R. R. station, public supply	8/11/21	0	0	.002	.004	.001	4.00	10.00	50.00	14.00	4.30	48	130	—	—	—	
Huntington	Tap at pumping station, public supply	11/25/21	0	0	.002	.010	Trace	3.00	10.00	33.80	16.00	1.10						

ir gton	Tap at Smith's restaurant, public supply	11/25/21	0	0	.002	.026	.001	3.00	9.60	32.50	20.00	1.50	.....	.....	.....	.....
Ilion	Spring at First Avenue	7/13/21	.....	.....	.....	.....	.....	.....	14.00	.....	.....	.....	800	2,800	—	—
Inlet	Tap at Parquet Hotel, Kenwell supply, public supply	9/ 3/21	.....	.....	.....	.....	.....	.....	1.50	.....	.....	.....	40	680	+	+
Inlet	Tap at Arrowhead Hotel room supply	9/ 3/21	.....	.....	.....	.....	.....	.....	1.50	.....	.....	.....	1,200	2,100	+	+
Inlet	Tap at Arrowhead Hotel drinking water supply, public supply	9/ 3/21	30	Trace	.014	.128	.001	.080	1.20	20.10	4.00	7.40	180	400	+	+
Inlet	Tap at Old Forge R. R. station, public supply	9/ 3/21	.....	.....	.....	.....	.....	.....	2.00	.....	.....	.....	450	4,500	+	—
Iroquois (Thomas Indian School)	Spring near institution	6/ 6/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,800	54,000	—	—
Iroquois (Thomas Indian School)	Cottage	6/ 6/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	10	—	—
Iroquois (Thomas Indian School)	New well	5/26/21	.....	.....	.....	.....	.....	.....	35.00	.....	.....	.....	900	1,700	—	—
Iroquois (Thomas Indian School)	Old well	5/26/21	.....	.....	.....	.....	.....	.....	18.00	.....	.....	.....	70	5,000	—	—
Iroquois (Thomas Indian School)	Spring	5/26/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75	275	+	+
Iroquois (Thomas Indian School)	Old well	6/ 6/21	Trace	20	.028	.326	.001	.020	16.50	169.00	152.00	2.60	60	120	—	—
Iroquois (Thomas Indian School)	New well	6/ 6/21	0	10	.100	.142	.001	.040	35.50	104.00	199.00	2.70	12,000	32,500	—	—
Iroquois (Thomas Indian School)	Spring	6/ 6/21	0	0	.002	.032	.001	.040	1.70	190.00	189.00	.50	7	10	—	—
Ithaca	Raw water, public supply	6/ 3/21	15	8	.054	.070	.008	.060	1.60	76.00	75.00	2.70	250	2,700	—	—
Ithaca	Settled water only, public supply	6/ 3/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	60	—	—
Ithaca	Filtered and chlorinated water, public supply	6/ 3/21	0	0	.024	.046	Trace	.040	1.80	76.00	74.00	2.40	3	6	—	—
Ithaca	Pump water, public supply	8/ 9/21	0	0	.030	.006	Trace	.020	26.00	162.50	154.00	1.10	30	25	—	—
Ithaca	Tap, public supply	8/ 9/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	850	—	—
Ithaca	Pump, public supply	8/ 9/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	170	700	—	—
Ithaca	Tap No. 1, public supply	8/ 9/21	0	0	.028	.004	.008	.040	26.00	156.00	148.00	1.50	1	15	—	—
Johnstown	Raw water at Cork Center reservoir, public supply	1/ 6/21	Trace	0	.016	.050	Trace	.060	1.80	117.20	97.00	2.60	44	110	+	+
Johnstown	Cold Brook reservoir, public supply	1/ 6/21	Trace	0	.018	.038	Trace	.040	1.80	65.00	28.00	2.10	5	70	+	—
Johnstown	Tap at 33 So. Perry St., Cork Center reservoir, 5 miles west of city, public supply	1/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	15	—	—
Johnstown	Intake chamber, Cork Center reservoir, public supply	10/14/21	0	0	.002	.024	.002	.020	.70	104.20	103.50	1.90	90	450	—	—
Johnstown	Tap, public supply	10/14/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	10	—	—
Johnstown	Cold Brook supply, public supply	10/29/21	Trace	0	.004	.016	.005	.060	.60	91.40	89.00	1.40	17	45	+	—
Johnstown	Old Cork reservoir, public supply	10/29/21	Trace	5	.002	.042	.005	.040	.60	105.80	99.00	2.10	20	20	—	—
Johnstown	Warren reservoir, public supply	10/29/21	5	Trace	.008	.030	Trace	.060	.60	83.20	78.00	2.10	24	50	—	—
Johnstown	Tap, public supply	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	60	—	—
Johnstown	Tap at Dr. Neuendorf's residence, public supply	11/30/21	0	0	.012	.060	.005	.030	1.10	72.90	69.00	1.70	20	160	+	—
Johnstown	Tap at fire station, public supply	11/30/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	260	+	—
Kaaterskill	Spring, U. & D. R. R	6/11/21	0	0	.002	.040	Trace	.400	1.50	23.40	14.50	.90	27	150	—	—

ir gton	.....
Ilion	—
Inlet	—
Inlet	—
Inlet	+
Inlet	—
Iroquois (Thomas Indian School) — Spring near institution	—
Iroquois (Thomas Indian School) — Cottage	—
Iroquois (Thomas Indian School) — New well 5/26/21	—
Iroquois (Thomas Indian School) — Old well 5/26/21	—
Iroquois (Thomas Indian School) — Spring 5/26/21	—
Iroquois (Thomas Indian School) — Old well 6/ 6/21	—
Iroquois (Thomas Indian School) — New well 6/ 6/21	—
Iroquois (Thomas Indian School) — Spring 6/ 6/21	—
Ithaca — Raw water	—
Ithaca — Settled water only	—
Ithaca — Filtered and chlorinated water	—
Ithaca — Pump water	—
Ithaca — Tap	—
Ithaca — Pump	—
Ithaca — Tap No. 1	—
Johnstown — Raw water at Cork Center reservoir	—
Johnstown — Cold Brook reservoir	—
Johnstown — Tap at 33 So. Perry St.	—
Johnstown — Intake chamber	—
Johnstown — Tap 10/14/21	—
Johnstown — Cold Brook supply	—
Johnstown — Old Cork reservoir	—
Johnstown — Warren reservoir	—
Johnstown — Tap	—
Johnstown — Tap at Dr. Neuendorf's residence	—
Johnstown — Tap at fire station	—
Kaaterskill	—

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS — Free ammonia	NITROGEN AS — Albuminoid ammonia	NITROGEN AS — Nitrites	NITROGEN AS — Nitrates	Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C. 37° C.	BACTERIA PER C. C. 20° C	B. COLI TYPE (+ = PRESENT) (— = ABSENT) 10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Keesville	Raw Ausable River water, public supply	11/ 7/21	40	10	.028	.126	.005	.060	3.90	36.40	29.00	29.00	550	4,900	+	+	+	..
Keesville	Driven well, public supply	11/ 7/21	3	20	.290	.174	.002	.040	3.70	151.40	149.00	4.50	,200	4,000	+	—	—	..
Keesville	Smith's springs, proposed supply, public supply	11/ 7/21	Trace	5	.002	.022	.003	.140	2.70	35.10	29.00	5.10	8,800	6,300	+	—	—	..
Keesville	Butternut Pond, public supply	11/ 7/21	40	5	.008	.174	.003	.100	7.60	122.80	119.00	8.35	500	1,300	+	+	—	..
Keesville	Bushea spring		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22	200	—	—	—	..
Kingston	Raw water, high pressure, public supply	10/ 5/21	Trace	5	.002	.064	.002	.060	2.20	26.00	23.00	11.70	43	70	+	+	—	..
Kingston	Raw water, low pressure, public supply	10/ 5/21	15	10	.002	.106	.002	.040	2.20	23.40	21.00	3.90	42	120	+	—	—	..
Kingston	Filtered and chlorinated, high pressure, public supply	10/ 5/21	0	0	.002	.038	.001	.100	2.50	22.10	21.00	1.00	1	1	—	—	—	..
Kingston	Filtered and chlorinated, low pressure, public supply	10/ 5/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	—	—	—	..
Lacona	Tap, public supply	7/22/21	0	0	.006	.006	.001	.100	1.70	92.60	87.00	.90	30	150	—	—	—	..
Lake George	Overflow emergency reservoir on Warrensburg Creek, public supply	6/ 3/21	0	0	.002	.044	.001	.060	.40	16.90	12.00	.50	4,400	9,500	+	—	—	..
Lake George	Overflow Prospect Mountain reservoir, public supply	6/ 3/21	0	0	.002	.044	.001	.040	.60	14.30	12.00	3.45	63	3,500	+	—	—	..
Lake George	Hemlock reservoir, public supply	6/ 3/21	0	0	.002	.024	.001	.020	.80	19.50	18.00	2.25	325	6,300	+	—	—	..
Lake George	Tap, public supply	6/ 3/21	0	0	.002	.024	.001	.020	.70	18.20	14.50	2.75	50	2,800	—	—	—	..
Lake Kushaqua (Stonywold Sanitarium)	Tap	6/11/21	30	0	.006	.116	.003	.140	.60	27.30	25.00	6.20	15,000	42,000	+	+	—	..
Lake Kushaqua (Stonywold Sanitarium)	Bottom of Lake Kushaqua at inlet	8/11/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48,000	.....	+	+	—	..
Lake Kushaqua (Stonywold Sanitarium)	Surface of Lake Kushaqua at inlet	8/11/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25,000	310,000	—	—	—	..
Lake Kushaqua (Stonywold Sanitarium)	Bottom of Lake Kushaqua at outlet	8/11/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,400	80,000	—	—	—	..
Lake Kushaqua (Stonywold Sanitarium)	Surface of Lake Kushaqua at outlet	8/11/21	30	Trace	.002	.132	.001	.100	.90	33.80	30.00	6.30	4,500	110,000	+	+	—	..
Lake Placid	Tap at office, public supply	6/ 9/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	—	—	—	..
Lake Placid	Tap at north end of town, public supply	6/ 9/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	6,300	—	—	—	..
Lake Placid	Tap at Whiteface Inn, public supply	7/14/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100	600	+	+	+	..
Lake Placid	Tap No. 1, public supply	12/ 9/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	3	—	—	—	..

Lake Placid	Tap No. 2 uptown, public supply	12/ 9/21	....	....	....	....	....	....	....	....	....	....	0	1	—	—	—	..
Larchmont	Tap, treated water, public supply	5/24/21	....	....	....	....	....	....	....	....	....	....	90	140	+	—	—	..
Larchmont	Raw water, public supply	7/19/21	20	Trace	.008	.306	.005	.120	6.00	38.70	28.00	4.30	750	4,000	+	+	+	..
Larchmont	Filtered and chlorinated, public supply	7/19/21	....	....	....	....	....	....	....	....	....	....	17	26	+	—	—	..
Larchmont	Raw water, large reservoir, public supply	7/19/21	....	....	....	....	....	....	....	....	....	....	120	180	+	+	—	..
Larchmont	Tap at Larchmont Club, public supply	7/19/21	Trace	0	.002	.076	.004	.040	6.00	50.00	26.00	2.10	51	4,600	+	+	—	..
Larchmont	Hydrant at R. R. bridge, public supply	7/19/21	....	....	....	....	....	....	....	....	....	....	120	160	—	—	—	..
Laurens	Lower group of springs, public supply	3/ 2/21	....	....	....	....	....	....	....	....	....	....	300	2,000	—	—	—	..
Laurens	Reservoir, composite springs, public supply	3/ 2/21	....	....	....	....	....	....	....	....	....	....	4	800	—	—	—	..
Laurens	Tap, public supply	3/ 2/21	0	0	.002	.030	Trace	.160	1.30	16.90	14.00	2.50	1	170	—	—	—	..
Le Roy	Raw water, public supply	1/ 7/21	25	5	.026	.170	Trace	.100	10.60	117.20	102.00	3.70	130	800	+	+	—	..
Le Roy	Coagulated water, public supply	1/ 7/21	....	....	....	....	....	....	....	....	....	....	160	1,000	+	+	+	..
Le Roy	Filtered water (C)	1/ 7/21	5	5	.030	.164	.002	.100	10.50	122.80	103.00	5.80	12	45	+	—	—	..
Le Roy	Filtered water (D)	1/ 7/21	....	....	....	....	....	....	....	....	....	....	30	50	+	+	—	..
Le Roy	Raw water, public supply	10/13/21	Trace	Trace	.070	.284	.003	.020	7.90	87.20	83.00	5.40	19,000	22,000	+	—	—	..
Le Roy	Treated water, public supply	10/13/21	0	0	.006	.220	.001	.020	8.00	88.60	75.00	4.80	2	5	—	—	—	..
Liberty	Reservoir, public supply	12/19/21	....	....	....	....	....	....	....	....	....	....	14	160	+	—	—	..
Liberty	Tap in village, public supply	12/19/21	5	20	.016	.042	.003	.060	3.20	29.90	24.00	2.50	....	....	....	....	....	..
Lily Dale	Drilled well at Newton Memorial Hosp.	2/10/21	....	....	....	....	....	....	....	....	....	....	2,300	3,200	+	+	+	..
Lily Dale	Drilled well at Newton Memorial Hosp.	2/10/21	....	....	....	....	....	....	148.00	....	....	....	210	12,500	+	+	—	..
Lily Dale	Tap in laboratory at Newton Memorial Hospital	4/11/21	0	0	.334	.048	.001	Trace	42.00	65.00	151.00	1.70	2	5	—	—	—	..
Lily Dale	Well No. 1, Newton Memorial Hospital	4/11/21	0	50	.140	.288	.001	.080	4.80	128.60	126.00	9.40	....	....	....	....	....	..
Lily Dale	Hose tap on main building, Newton Memorial Hospital	4/11/21	....	....	....	....	....	....	4.00	....	....	....	4	5	—	—	—	..
Lily Dale	Outlet of sewer, middle of lake	9/12-21	5	15	.006	.442	.001	.040	3.60	58.60	55.00	11.00	750	1,400	+	—	—	..
Lily Dale	Forest temple well, public supply	9/12/21	....	....	....	....	....	....	....	....	....	....	1,000	1,200	+	+	+	..
Lily Dale	Tap at pumping station, public supply	9/12/21	30	5	.036	.260	.001	.020	2.20	64.30	55.50	6.70	1,250	1,550	—	—	—	..
Lily Dale	Well at Leolyn Hotel, semi-public supply	9/12/21	....	....	....	....	....	....	22.00	....	....	....	18,700	9,000	—	—	—	..
Lily Dale	Well at Maplewood Hotel, semi-public supply	9/12/21	....	....	....	....	....	....	....	....	....	....	500	350	+	—	—	..
Lily Dale	Well at Melrose Park, semi-public supply	9/12/21	0	0	.004	.002	.001	.140	1.00	188.50	165.00	.90	300	470	—	—	—	..
Lima	Pump well, public supply	3/24/21	0	Trace	.166	.018	.001	.060	4.60	325.00	270.00	1.70	2	10	—	—	—	..
Lima	Tap at fountain, public supply	3/24/21	....	....	....	....	....	....	....	....	....	....	2	5	—	—	—	..
Little Falls	Aerating canal, public supply	3/21/21	....	....	....	....	....	....	....	....	....	....	18	325	+	—	—	..
Little Falls	Distributing reservoir, public supply	3/21/21	....	....	....	....	....	....	....	....	....	....	70	325	—	—	—	..
Little Falls	Tap at City Hall, public supply	3/21/21	....	....	....	....	....	....	....	....	....	....	29	400	—	—	—	..
Little Falls	Flint spring proposed supply for public fountain, public supply	7/ 1/21	....	....	....	....	....	....	....	....	....	....	19,000	51,000	+	—	—	..
Livingston Manor	Lower Matawa Lake, public supply	10/29/21	....	....	....	....	....	....	....	....	....	....	16	75	—	—	—	..
Livingston Manor	Upper Matawa Lake, public supply	10/29/21	....	....	....	....	....	....	....	....	....	....	14	10	—	—	—	..
Livingston Manor	Tap at Baldwins hotel, public supply	10/29/21	....	....	....	....	....	....	....	....	....	....	34	200	+	—	—	..
Livingston Manor	Tap at C. M. Woolsey's residence, public supply	10/29/21	35	3	.010	.160	.002	.100	.90	18.20	15.00	8.10	400	2,400	+	—	—	..
Locke	Tap, public supply	6/ 3/21	0	0	.002	.024	.002	.200	1.30	162.50	150.50	1.35	2,600	10,500	+	+	—	..
Lyons	Tap at E. Smith's residence, public supply	1/22/21	....	....	....	....	....	....	....	....	....	....	3	45	—	—	—	..
Lyons	Tap at D. Steeder's residence, public supply	1/22/21	....	....	....	....	....	....	....	....	....	....	1	80	—	—	—	..
Lyons	Tap at E. Clauss' residence, public supply	1/22/21	....	....	....	....	....	....	....	....	....	....	2	60	—	—	—	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS — Free ammonia	Albuminoid ammonia	Nitrites	Nitrates	Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C. 37° C.	20° C.	B. COLI TYPE (+ = PRESENT) (— = ABSENT) 10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Lyons	Tap at R. S. Simpson's residence, public supply	1/22/21											10	40	—	—	—	..
Lyons	Raw water, overflow from reservoir, public supply	4/13/21	20	10	.016	.354	.002	.040	5.00	571.00	137.50	10.90	190	270	—	—	—	..
Lyons	Filtered and chlorinated water at filter plant, public supply	4/13/21	20	0	.018	.178	.001	.060	5.00	586.00	136 00	8.50	15	11	—	—	—	..
Lyons	Tap, public supply	4/13/21											8	8	—	—	—	..
Lyons	Raw water, public supply	9/20/21	20	Trace	.040	.266	.002	.040	3.40	285.50	114.00	6.20	500	150	+	—	+	..
Lyons	Influent to filters, public supply	9/20/21											140	50	—	—	—	..
Lyons	Clear water well, public supply	9/20/21											170	140	+	—	—	..
Lyons	Tap at pumping station, public supply	9/20/21											38	40	—	—	—	..
Lyons	Tap at express office, public supply	9/20/21	15	0	.008	.184	.002	.040	3.60	180.00	121.00	4.20	19	5	—	—	—	..
Macedon	Well, proposed supply, public supply	8/31/21	0	Trace	.006	.046	.010	4.00	4.60	283.00	208.00	2.00	84,000	23,000	+	+	—	..
Manchester	Well, public supply	11/31/21							124.00				60	700	—	—	—	..
Manchester	Tap at Tuckee drug store, public supply	11/31/21							116.00				5	25	—	—	—	..
Manchester	Tap at Gilman house, public supply	11/31/21							103.00				0	5	—	—	—	..
Marlboro	Reservoir, public supply	4/15/21	0	70	.420	.334	.001	.060	4.40	55.70	28.00	12.00	650	7,400	+	+	—	..
McKownsville	Overflow from reservoir, public supply	4/27/21											130	275	+	—	—	..
McKownsville	Tap, public supply	4/27/21	50	Trace	.002	.230	.003	.020	5.80	65.00	59.00	6.15	28	50	+	—	—	..
McKownsville	Raw water, public supply	6/27/21											70	120	—	—	—	..
McKownsville	Treated water, public supply	6/27/21											36	23	—	—	—	..
Mechanicville	Tap, public supply	2/25/21											18	50	—	—	—	..
Medina	Well, public supply	9/28/21	0	0	.002	.034	.001	.300	26.00	293.00	171.00	2.20	5,000	1,700	+	—	—	..
Medina	Tap, public supply	11/16/21											75	1,900	+	—	—	..
Medina	Tap, public supply	11/26/21											24	1,800	+	—	—	..
Medina	Tap, public supply	11/16/21											130	1,900	+	—	—	..
Medina	Tap, public supply	11/16/21	0	0	.008	.052	Trace	.400	19.50	208.00	167.00	2.10	78	1,900	—	—	—	..
Medina	Tap, public supply	11/16/21											47	1,300	+	—	—	..
Middleport	Pipe line near water supply, public supply	7/30/21											9,800	38,500	—	—	—	..
Middleport	Surface of reservoir new supply, public supply	7/30/21											11,000	7,400	—	—	—	..
Middleport	Bottom of reservoir new supply, public supply	7/30/21											32,000	160,000	+	+	—	..

Middleport	Clear water well, public supply	7/30/21	50	40	1.528	.384	.002	.060	5.90	286.00	262.50	13.50						
Middleport	Reservoir, public supply	11/18/21	20	20	.012	.460	.005	.100	10.80	261.00	215.00	8.30						
Middleport	Clear water well, filtered water at pumping station, public supply	11/18/21											29	150	—	—	—	
Middleport	Tap at City Hall, public supply	11/18/21											26	100	—	—	—	
Middletown	Raw water, treated with alum, low pressure, public supply	10/ 6/21											12	25	—	—	—	
Middletown	Filtered water, low pressure, public supply	10/ 6/21	0	Trace	.002	.136	.001	.060	1.20	31.20	14.00	4.10	130	350	+	—	—	
Middletown	Reservoir No. 1, low pressure, treated with copper sulphate, public supply	10/ 6/21	0	Trace	.060	.226	.002	.040	1.20	36.40	26.00	5.10	11	60	—	—	—	
Middletown	Raw water, high pressure, public supply	10/ 6/21	0	0	.002	.114	.002	.040	1.60	29.90	14.00	2.60	3,900	6,700	—	—	—	
Middletown	Filtered water, high pressure, public supply	10/ 6/21	0	Trace	.164	.056	.002	.200	1.60	29.90	15.00	1.80	1	1,800	—	—	—	
Milford	Tap, public supply	6/ 6/21	10	20	.004	.128	.002	.100	3.20	40.30	35.00	3.10	16,000	91,000	+	+	—	
Milford	Tap, public supply	7/21/21											3,000	6,200	+	+	+	
Millerton	Upper spring overflow, public supply	4/18/21											250	5,200	—	—	—	
Millerton	Well, discharge of pump, public supply	4/18/21											25	1,300	—	—	—	
Millerton	Reservoir, public supply	4/18/21	0	0	.002	.016	.002	.100	2.50	121.40	106.00	1.60	70	1,200	—	—	—	
Millerton	Tap, public supply	4/18/21	0	0	.002	.020	.002	.160	2.50	117.20	102.50	.90	3	1,200	—	—	—	
Mohawk	Spring	4/15/21	0	0	.002	.010	.002	.700	3.40	200.00	168.00	1.30	120	1,400	—	—	—	
Mohawk	School	4/15/21											12	40	—	—	—	
Mohawk	Pond's, Richfield street, public supply	4/15/21											1	90	—	—	—	
Mohawk	Marshall avenue, public supply	4/15/21											1	2	—	—	—	
Mohawk	Canal, water opposite well used by municipality	5/14/21	5	5	.020	.110	.040	4.00	18.50	190.00	162.50	3.70	160	100	+	+	—	
Mohawk	Pump discharge, public supply	5/14/21	0	0	.006	.010	Trace	.700	3.20	208.00	158.00	2.50	2,000	3,900	—	—	—	
Mohawk	Tap at Dr. Crough's residence, public supply	5/14/21											1	3	—	—	—	
Mohawk	Public fountain at Otsego street	5/14/21							1.50				1	10	—	—	—	
Montgomery	Tap at pumping station, public supply	3/17/21											4	60	+	—	—	
Montgomery	Tap, public supply	3/17/21	0	0	.008	.030	.003	1.00	4.40	128.60	113.00	2.20	7	90	+	—	—	
Montour Falls	Tap, public supply	4/16/21	0	0	.004	.118	.000	.240	3.00	76.00	61.00	1.60	7,700	21,000	—	—	—	
Montour Falls	Tap, auxiliary, public supply	4/16/21	0	0	.002	.102	.000	.300	3.60	83.20	68.00	1.90	210	2,400	+	—	—	
Moravia	Tap at Dr. Anthony's residence, public supply	5/13/21	0	0	.004	.034	.001	.800	1.60	48.60	32.00	1.80	47	350	—	—	—	
Moravia	Tap at Robbin's shop, public supply	5/13/21											1	5	—	—	—	
Moravia	Tap at Wheat's store, public supply	5/13/21											4	5	—	—	—	
Morris	Raw water reservoir, public supply	3/31/21	10	5	.012	.068	.001	.160	1.60	15.60	6.00	3.00	75	700	+	+	—	
Morris	Tap, public supply	3/31/21	5	0	.002	.034	Trace	.200	1.60	15.60	7.00	2.90	9	35	—	—	—	
Morrisville	Overflow of Jones' Mill Pond, public supply	11/25/21											200	8,800	+	+	—	
Morrisville	Main spring head of reservoir, public supply	11/25/21											4,100	350	—	—	—	
Morrisville	Southwest inlet, public supply	11/25/21											160	5,100	+	—	—	
Morrisville	West spring, public supply	11/25/21											150	4,440	+	+	—	
Morrisville	Tap, public supply	11/25/21											37	375	—	—	—	

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS —				Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C.		B. COLI TYPE (+ = PRESENT) (— = ABSENT)			
					Free ammonia	Albuminoid ammonia	Nitrites	Nitrates					37° C.	20 C.	10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Mt. Upton	Tap, public supply	3/30/21	0	0	.002	.006	.001	.120	2.10	25.30	18.00	1.90	1	50	—	—	—	
Mt. Vernon	Raw water, Mamaroneck supply	10/ 8/21	0	10	.064	.186	.005	.160	9.00	65.70	57.00	5.90	7,500	15,500	+	+	+	
Mt. Vernon	Filtered and chlorinated water, Mamaroneck supply	10/ 8/21	0	Trace	.002	.078	.001	.200	13.00	59.30	42.00	3.10	8	850	—	—	—	
Mt. Vernon	Raw water, Pelham supply, public supply	10/ 8/21	40	35	.012	.518	.010	.100	9.50	81.40	51.00	8.30	3,700	19,500	—	—	—	
Mt. Vernon	Filtered water, Pelham supply, public supply	10/ 8/21	20	Trace	.034	.154	.001	.240	9.50	78.60	48.00	3.90	47,000	260,000	—	—	—	
Mt. Vernon	Tap, public supply	10/ 8/21											800	38,000	—	—	—	
Naples	Large spring, proposed public supply	4/20/21	0	0	.002	.004	.001	.700	1.00	144.40	125.00	.70	2,600	6,500	—	—	—	
Naples	Creek below barn, public supply	4/20/21											550	1,600	+	+	—	
Naples	Creek above barn, public supply	4/20/21											180	900	+	+	—	
Naples	Tap, public supply	4/20/21	5	10	.002	.066	.001	.300	2.50	130.00	117.00	2.60	15,000	22,000	+	+	—	
Newark (State School)	Spring water supply	3/19/21	0	0	.002	.008	.002	1.00	4.60	500.00	208.00	2.20	2	10	—	—	—	
Newark (State School)	Raw canal water	3/19/21											140	200	+	—	—	
Newark (State School)	Filtered canal water	3/19/21	2	Trace	.002	.068	.001	1.20	14.00	200.00	113.00	3.40	4	5	+	—	—	
Newark (Village)	Raw water, public supply	7/28/21											325	1,900	—	—	—	
Newark	Clear well filter, public supply	7/28/21	25	5	.018	.318	.002	.080	5.20	156.00	146.00	6.90	475	550	—	—	—	
Newark	Tap at City Hall, public supply	7/28/21											5,700	6,600	—	—	—	
Newark	Spring north of Nichols' Block, public supply	9/16/21											130,000	318,000	+	+	—	
Newark	Raw water, public supply	9/16/21	5	10	.060	.660	.001	.020	5.40	201.50	160.00	9.50	2,000	2,500	+	+	—	
Newark	Influent to filters, public supply	9/16/21											12,250	15,200	—	—	—	
Newark	Filtered water, public supply	9/16/21											2,500	2,900	—	—	—	
Newark	Tap, public supply	9/16/21	5	10	.002	.446	.001	.100	5.20	208.00	164.00	9.00	2,000	2,200				
Newburgh	Reservoir, public supply	6/ 6/21											28	170	—	—	—	
Newburgh	Tap at City Hall	6/ 6/21	20	Trace	.008	.222	.001	.060	2.40	47.10	45.00	4.60	500	4,600	—	—	—	
New Rochelle	Reservoir No. 1, raw water, public supply	8/16/21	15	5	.054	.222	.001	.040	7.00	40.30	32.00	3.70	700	2,700	—	—	—	
New Rochelle	Reservoir No. 4, untreated water, public supply	8/16/21	10	8	076	.206	.001	.040	7.50	40.30	34.00	6.40	375	600	+	+	+	
New Rochelle	Reservoir No. 4, treated water, public supply	8/16/21											1,200	13,000	+	—	—	

New Rochelle	Reservoir No. 1 and No. 4, treated water, public supply	8/16/21	0	3	.002	.122	.002	.100	7.00	36.40	32.00	4.30	....	....	....	....	....
New Rochelle	Reservoir No. 2 and No. 3, raw water, public supply	8/16/21	10	3	.036	.130	.001	.040	6.50	52.90	41.00	3.60	150	100	—	—	—
New Rochelle	Reservoir No. 2 and No. 3, treated water, public supply	8/16/21	Trace	3	.034	.140	.002	.040	7.00	50.00	40.00	3.70	1,500	11,500	—	—	—
Niagara Falls	Raw water, municipal public supply	6/ 9/21	0	Trace	.032	.082	.002	.060	11.60	100.00	93.50	3.20	475	1,400	+	+	+
Niagara Falls	Tap at barber shop, municipal public supply	6/ 9/21	0	0	.050	.056	.002	.060	11.80	97.20	87.00	1.50	1,700	100	—	—	—
Niagara Falls	Raw water before chlorination, Western N. Y. Water Co., public supply	6/ 9/21	5	2	.094	.136	.003	.060	11.50	97.20	92.00	2.90	1,110	4,800	+	+	+
Niagara Falls	Raw water after preliminary chlorination and before filtration, Western N. Y. Water Co., public supply	6/ 9/21	.....	.....	.....	.....	.....	.....	......	......	......	......	3,000	9,700	—	—	—
Niagara Falls	Filtered water before final chlorination, Western N. Y. Water Co., public supply	6/ 9/21	.....	.....	.....	.....	.....	.....	......	......	......	......	30	200	+	+	—
Niagara Falls	Tap at pump station, filtered and chlorinated, Western N. Y. Water Co., public supply	6/ 9/21	.....	.....	.....	.....	.....	.....	......	......	......	......	500	75	—	—	—
Niagara Falls	Tap at R. R. station, Western N. Y. Water Co., public supply	6/ 9/21	0	0	.006	.082	.001	.060	11.90	97.20	88.00	2.10	1	8,300	—	—	—
Norfolk	Trout brook, proposed source, public supply	6/18/21	35	0	.020	.308	.001	.060	4.80	169.00	161.50	13.60	1,700	650	+	+	—
Norfolk	Raquette River, proposed source, public supply	6/18/21	60	0	.038	.204	.002	.060	2.50	15.60	6.00	14.00	9,800	37,000	+	+	+
Norfolk	Flowing town well, proposed source, public supply	6/18/21	0	0	.038	.016	Trace	.040	6.20	221.50	216.50	2.80	8	20	—	—	—
North Creek	Overflow of reservoir west of village, public supply	6/ 1/21	.....	.....	.....	.....	.....	.....	......	......	......	......	180	1,600	+	+	—
North Creek	Pond, auxiliary public supply	6/ 1/21	10	Trace	.032	.190	.003	.500	2.20	24.70	17.00	4.50	....	....	....	....	....
North Creek	Brook southwest of village, auxiliary public supply	6/ 1/21	.....	.....	.....	.....	.....	.....	......	......	......	......	500	5,600	+	—	—
North Creek	Tap "B," public supply	6/ 1/21	Trace	0	.002	.058	Trace	Trace	.60	14.30	11.00	3.65	18	160	+	+	—
North Creek	Tap "E," public supply	6/ 1/21	.....	.....	.....	.....	.....	.....	......	......	......	......	3	10	—	—	—
North Creek	R. R. spring sometimes used in passenger cars	11/22/21	.....	.....	.....	.....	.....	.....	......	......	......	......	220	8,300	—	—	—
North Creek	Tap at Mrs. Henry Brown's residence, public supply	11/22/21	.....	.....	.....	.....	.....	.....	......	......	......	......	600	88,000	+	—	—
North Creek	Tap at Mr. D. Owen's residence, public supply	11/22/21	.....	.....	.....	.....	.....	.....	......	......	......	......	600	36,000	+	+	—
North Creek	Tap at R. R. station, public supply	11/22/21	20	0	.004	.062	.001	.200	2.10	14.30	12.00	4.50	....	....	....	....	....
North Tarrytown	Raw water, public supply	9/ 9/21	10	15	.106	.234	.002	.040	5.50	51.40	47.00	5.10	31	450	+	—	—
North Tarrytown	Filtered water, public supply	9/ 9/21	6	0	.008	.096	.001	.060	4.90	50.00	35.00	3.40	1	10	—	—	—
North Tarrytown	Tap, public supply	9/ 9/21	.....	.....	.....	.....	.....	.....	......	......	......	......	2	70	—	—	—
Northville	Overflow at reservoir, public supply	5/25/21	.....	.....	.....	.....	.....	.....	......	......	......	......	78	170	—	—	—
Northville	Tap, public supply	5/25/21	25	0	.004	.066	Trace	.060	.70	20.80	11.00	4.70	8	15	—	—	—

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS — Free ammonia	Albuminoid ammonia	Nitrites	Nitrates	Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C. 37° C.	20° C	B. COLI TYPE) (+ = PRESENT (— = ABSENT) 10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Oakfield	Tap at pumping station, public supply	3/22/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	650	2,800	—	—	—	..
Oakfield	Tap at R. R. station, public supply	3/22/21	0	0	.004	.022	.080	.300	12.00	614.00	213.00	2.20	2	10	—	—	—	..
Ogdensburg	Raw water, public supply	2/ 4/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....	—	—	—	..
Ogdensburg	Clear water well, public supply	2/ 4/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	....	—	—	—	..
Ogdensburg	Filtered water, public supply	2/ 4/21	0	0	.002	.036	.000	.160	11.00	100.00	98.00	3.20	1	....	—	—	—	..
Ogdensburg	Raw water, public supply	2/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	190	800	+	—	—	..
Ogdensburg	Clear water well, public supply	2/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	16	—	—	—	..
Ogdensburg	Tap at filter plant, filtered water, public supply	2/10/21	0	0	.008	.028	.000	.100	12.00	114.20	110.00	3.90	1	7	—	—	—	..
Ogdensburg	Tap at Mr. R. O'Marah's residence, public supply	2/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	16	—	—	—	..
Ogdensburg	Well at filter plant, public supply	10/13/21	0	0	.010	.054	.002	.040	10.00	101.40	96.00	2.70	190	450	+	+	—	..
Ogdensburg	Tap, public supply	10/13/21	0	0	.002	.052	.002	.020	10.00	98.60	96.00	2.20	25,000	50,000	+	—	—	..
Ogdensburg	Public fountain	10/22/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	275	300	+	—	—	..
Ogdensburg	Tap, public supply	10/22/21	80	0	.010	.196	.010	.200	2.00	24.70	14.00	22.40	110	500	—	—	—	..
Old Forge	Moose river, sample No. 1, public supply	8/22/21	5	Trace	.050	.166	.001	.080	1.80	30.60	10.00	8.80	140	290	+	—	—	..
Old Forge	Moose river, sample No. 2, public supply	8/22/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	550	1.730	+	+	—	..
Old Forge	Pump discharge chlorinated, north branch, Moose river, public supply	8/27/21	5	Trace	.022	.118	.002	.040	3.00	16.90	11.00	6.50	4	40	—	—	—	..
Old Forge	Public fountain	8/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,100	185,000	—	—	—	..
Old Forge	Raw water, north branch of Moose river, public supply	8/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	600	1,700	+	—	—	..
Old Forge	Lower reservoir, public supply	8/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,100	14,500	+	—	—	..
Old Forge	Inlet to upper reservoir, public supply	8/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300,000	500,000	—	—	—	..
Old Forge	Tap at R. R. station, public supply	9/ 3/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	450	4,500	+	—	—	..
Old Forge	Pump discharge, chlorinated water public supply	8/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	10	—	—	—	..
Old Forge	Tap, public supply	8/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,000	7,800	+	—	—	..
Old Forge	Overflow, public fountain	8/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	72,000	91,000	+	—	—	..
Old Forge	Tap at public fountain	8/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,200	2,800	+	—	—	..
Old Forge	Tap, public supply	10/22/21	80	0	.010	.196	.010	.200	2.00	24.70	14.00	22.40	110	500	—	—	—	..
Old Forge	Public fountain	10/22/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	275	300	+	—	—	..
Olean	Raw water, public supply	4/21/21	20	35	.010	.128	.002	.200	1.60	36.40	25.00	5.00	210	110,000	+	+	+	..
Olean	Filtered and chlorinated, public supply	4/21/21	Trace	0	.006	.044	Trace	.300	1.40	35.10	24.00	3.90	3	1	—	—	—	..

Olean	City wells	4/21/21	0	0	.008	.006	.004	.600	15.60	175.50	140.00	.70	100	600	—	—	—	..
Olean	Erie dug well	4/21/21	....	....	....	....	....	....	....	....	....	....	110	700	—	—	—	..
Olean	Driven well, Penn. R. R. station	4/21/21	....	....	....	....	....	....	....	....	....	....	1,600	55,000	—	—	—	..
Olean	Tap at City Building, public supply	8/19/21	....	....	....	....	....	....	....	....	....	....	50	2,700	—	—	—	..
Olean	Tap at 112 So. Barry St., public supply	8/19/21	....	....	....	....	....	....	....	....	....	....	3	900	—	—	—	..
Olean	Tap at 422 West St., public supply	8/19/21	....	....	....	....	....	....	....	....	....	....	1,700	1,500	—	—	—	..
Olean	Tap at 710 Washington Ave., public supply	8/19/21	....	....	....	....	....	....	....	....	....	....	1,700	6,600	—	—	—	..
Olean	Tap at filtration plant, public supply	8/19/21	0	0	.004	.048	Trace	.100	3.20	72.80	62.00	3.30	....	....	....	....	....	..
Olean	Well, public supply	8/19/21	0	0	.008	.012	.005	.400	13.40	175.50	161.00	1.20	....	....	....	....	....	..
Olean	Tap 1201 No. Union St., public supply	8/19/21	....	....	....	....	....	....	....	....	....	....	1	8,800	—	—	—	..
Oneida	Tap, public supply	5/31/21	5	17	.026	.120	Trace	.200	9.40	571.00	161.00	4.80	....	....	....	....	....	..
Oneida	Woodman's pond at Eaton, possible water supply for City of Oneida	5/31/21	3	Trace	.052	.146	Trace	.020	2.20	108.60	105.00	4.00	....	....	....	....	....	..
Oswego	Tap at Bests' Ice Cream Store, public supply	3/30/21	....	....	....	....	....	....	....	....	....	....	7	10	—	—	—	..
Oswego	Tap at Wade's, public supply	3/30/21	....	....	....	....	....	....	....	....	....	....	9	10	—	—	—	..
Oswego	Tap at Beckstead's, public supply	3/30/21	....	....	....	....	....	....	....	....	....	....	11	75	—	—	—	..
Oswego	Tap at pump house, public supply	8/18/21	0	0	.002	.076	Trace	.060	10.00	97.20	91.00	2.30	38,000	35,000	—	—	—	..
Oswego	Tap at Wade's, public supply	8/18/21	....	....	....	....	....	....	....	....	....	....	21,000	68,000	—	—	—	..
Oswego	Tap at City Hall, public supply	8/18/21	....	....	....	....	....	....	....	....	....	....	250	900	—	—	—	..
Oswego	Tap at McCaffrey's	8/18/21	....	....	....	....	....	....	....	....	....	....	12,000	43,000	—	—	—	..
Ovid	Simpson Creek, public supply	6/ 4/21	0	5	.032	.086	.008	2.00	3.80	208.00	199.00	.60	1,800	6,400	+	+	+	..
Ovid	Springs, public supply	6/ 4/21	0	0	.002	.032	.001	2.00	2.80	208.00	195.00	1.30	230	8,300	—	—	—	..
Oyster Bay	Tap at pumping station, public supply	11/25/21	0	0	.008	.020	Trace	.600	6.60	20.80	16.00	1.60	119	180	+	+	+	..
Oyster Bay	Tap at Dr. Hall's office, public supply	11/25/21	0	Trace	.002	.044	Trace	.600	6.60	20.80	11.00	1.50	35	0	+	+	—	..
Oyster Bay	Tap at pumping station, public supply	12/22/21	....	....	....	....	....	....	....	....	....	....	15	10	—	—	—	..
Oyster Bay	Tap at Town Clerk's office	12/22/21	....	....	....	....	....	....	....	....	....	....	9	9	—	—	—	..
Palmyra	Upper well, public supply	7/28/21	0	0	.002	.036	.002	4.00	12.20	273.00	240.00	1.70	12,500	360,000	—	—	—	..
Palmyra	Lower well, public supply	7/28/21	0	0	.002	.058	.002	4.00	7.30	321.50	175.00	2.00	15,000	68,000	+	+	—	..
Palmyra	Tap, public supply	7/28/21	....	....	....	....	....	....	....	....	....	....	2,900	13,800	+	+	—	..
Palmyra	Betty spring	9/16/21	0	0	.002	.006	.001	.200	1.40	286.00	195.00	.80	2,050	2,400	—	—	—	..
Palmyra	McNutt spring	9/16/21	0	0	.002	.024	.002	1.400	3.80	686.00	208.00	1.80	500	525	+	—	—	..
Palmyra	Upper well	9/16/21	....	....	....	....	....	....	....	....	....	....	330	400	—	—	—	..
Palmyra	Lower well	9/16/21	0	0	.002	.056	.001	5.60	8.80	312.00	191.00	.70	13,150	17,600	—	—	—	..
Palmyra	Tap at pumping station, public supply	9/16/21	....	....	....	....	....	....	....	....	....	....	0	35	—	—	—	..
Palmyra	Tap in a house about 2,000 feet from well, public supply	9/22/21	....	....	....	....	....	....	....	....	....	....	3,300	....	—	—	—	..
Palmyra	Tap, public supply	9/22/21	0	10	.002	.110	.002	4.00	78.00	500.00	267.00	4.50	26,000	150,000	+	—	—	..
Pawling	Tap, public supply	4/13/21	0	0	.006	.074	.001	.060	3.40	72.90	60.00	3.20	13	5	—	—	—	..
Peekskill	Aerated raw water from sediment basin above filter, public supply	12/20/21	....	....	....	....	....	....	....	....	....	....	160	190	+	—	—	..
Peekskill	Brook, public supply	12/20/21	25	0	.016	.144	.002	.060	4.20	35.10	25.00	6.30	2,500	1,900	+	+	—	..
Peekskill	Tap at drug store, filtered water, public supply	12/20/21	....	....	....	....	....	....	....	....	....	....	8	10	+	—	—	..
Peekskill	Tap at Dr. Snowden's residence, public supply	12/20/21	20	0	.004	.092	.001	.100	4.80	37.70	13.50	4.60	10	10	—	—	—	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS — Free ammonia	Albuminoid ammonia	Nitrites	Nitrates	Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C. 37° c.	20° c.	B COLI TYPE (+ = PRESENT) (— = ABSENT) 10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Peru	Furnace Brook, near proposed reservoir, public supply	6/24/21	0	0	.008	.056	.002	.600	.60	74.30	11.00	2.30	17,500	34,500	+	+	+	..
Peru	Arnold Branch Barlow Bridge in vicinity of proposed reservoir	6/24/21	15	0	.040	.082	.010	.800	1.70	64.30	60.00	3.35	1,700	8,100	+	+	+	..
Peru	Brook spring, proposed supply, public supply	6/24/21	....	....	....	....	....	....	....	....	....	....	850	2,000	+	—	—	..
Philadelphia	Impounding spring basin, public supply	4/16/21	....	....	....	....	....	....	....	....	....	....	2,100	2,900	—	—	—	..
Philadelphia	Tap, public supply	4/16/21	0	0	.002	.050	.002	.060	1.10	33.80	25.00	1.60	4,800	2,100	—	—	—	..
Philmont	Forest Lake, below inlet filter, public supply	10/27/21	5	Trace	.008	.170	.003	.060	1.20	23.40	15.00	3.50	38	1,800	+	—	—	..
Philmont	Tap, public supply	10/27/21	5	5	.004	.166	Trace	.060	1.20	23.40	20.00	3.80	25	1,000	—	—	—	..
Phoenicia	Muddy Brook supply, public supply	6/ 2/21	0	Trace	.002	.026	.000	.240	.30	20.80	9.00	1.40	1,500	4,700	—	—	—	..
Phoenicia	Spring supply, public supply	6/ 2/21	0	0	.002	.012	.002	.040	.40	20.80	16.50	1.30	26	120	+	—	—	..
Phoenicia	Overflow from one of the springs, public supply	6/ 2/21	....	....	....	....	....	....	....	....	....	....	7	100	—	—	—	..
Plattsburg	Lower West Brook reservoir, public supply	6/15/21	10	35	.062	.654	.002	.020	1.50	88.60	80.00	17.60	50	75	—	—	—	..
Plattsburg	South storage reservoir, public supply	6/15/21	....	....	....	....	....	....	....	....	....	....	63	350	+	+	—	..
Plattsburg	Tap below chlorination plant, public supply	6/15/21	10	35	.058	.686	.002	.060	1.80	83.20	80.50	18.00	50	1,300	—	—	—	..
Plattsburg	Tap at High School, public supply	6/15/21	....	....	....	....	....	....	....	....	....	....	130	1,100	—	—	—	..
Plattsburg	Tap at R. R. station, public supply	6/15/21	....	....	....	....	....	....	....	....	....	....	220	425	+	—	—	..
Plattsburg	Distributing reservoir, public supply	7/22/21	15	40	.084	.492	.003	.020	1.50	102.80	101.00	7.90	400	440	+	+	—	..
Plattsburg	Mead pond, not chlorinated	7/28/21	Trace	0	.002	.040	.002	.160	1.30	131.40	126.50	2.80	9,700	102,000	+	+	+	..
Plattsburg	Distributing reservoir, chlorinated water, public supply	7/28/21	30	5	.246	.376	.002	.160	1.70	108.60	102.00	6.40	1,400	2,000	+	+	—	..
Plattsburg	Raw West Brook water, public supply	8/ 4/21	....	....	....	....	....	....	....	....	....	....	60	300	+	—	—	..
Plattsburg	Chlorinated West Brook water, public supply	8/ 4/21	....	....	....	....	....	....	....	....	....	....	450	500	—	—	—	..
Plattsburg	Raw Mead Brook water, public supply	8/ 4/21	....	....	....	....	....	....	....	....	....	....	84,000	38,000	+	+	+	..
Plattsburg	Chlorinated Mead Brook water, public supply	8/ 4/21	....	....	....	....	....	....	....	....	....	....	10	2	—	—	—	..

Plattsburg	Distributing reservoir, public supply	8/ 4/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22,000	32,000	−	−	−	.
Plattsburg	Tap at Dr. La Rocques' office, public supply	8/ 4/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,800	19,000	−	−	−	..
Plattsburg	North distributing reservoir, public supply	8/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	650	750	−	−	−	..
Plattsburg	West Brook, chlorinated water	8/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	35	−	−	−	..
Plattsburg	Mead Brook, chlorinated, public supply	8/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	2	−	−	−	..
Plattsburg	Tap at New Cumberland Hotel, public supply	8/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,500	550	−	−	−	.
Plattsburg	Raw Mead Brook, public supply	8/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27,000	47,000	+	+	+	..
Plattsburg	Treated Mead Brook, public supply	8/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32,500	....	+	+	−	.
Plattsburg	Tap, Witherill Hotel, chlorinated water, public supply	8/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	88,400	1,000,000	+	−	−	.
Plattsburg	Tap at Cumberland Hotel, chlorinated water, public supply	8/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40,000	550,000	+	+	−	..
Plattsburg	Reservoir at H. R. R. R. station, public supply	8/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48,000	500,000	+	+	−	.
Plattsburg	Raw West Brook, public supply	8/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	700	8,000	+	−	−	..
Plattsburg	Chlorinated West Brook, public supply	8/27/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	95	110,000	−	−	−	..
Plattsburg	Tap at Dr. La Rocques' office, chlorinated water, public supply	8/27/21	5	15	.082	.366	.003	.100	2.80	120.00	111.00	6.00	.....	....	.....	.....	.....	..
Plattsburg	Spring near Hotel Champlain, public supply	9/23/21	0	50	.008	.130	.003	.060	5.60	338.00	252.00	4.90	200	700	+	−	−	..
Plattsburg	Tap, lake water, public supply	9/23/21	0	0	.006	.116	.001	.120	1.70	48.60	45.00	4.50	3,900	22,000	−	−	−	..
Plattsburg	Tap at pumping station, Hotel Champlain, public supply	9/23/21	0	12	.710	.094	.002	.140	2.00	114.20	108.00	5.10	4,400	....	−	−	−	..
Plattsburg	Raw Mead Brook, public supply	9/29/21	0	0	.002	.020	.002	.200	0.80	141.40	136.00	2.30	.....	....	.....	.....	.....	..
Plattsburg	Treated Mead Brook, public supply	9/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,500	350	+	+	−	..
Plattsburg	Raw West Brook, public supply	9/29/21	15	5	.042	.192	.002	.000	1.00	122.80	118.00	6.20	80	50	+	+	−	..
Plattsburg	Treated West Brook, public supply	9/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80	5	−	−	−	..
Plattsburg	Distributing reservoir, public supply	9/29/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800	14,000	+	−	−	..
Poland	Tap spring, main source, public supply	7/22/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,300	16,500	+	+	+	..
Poland	Tap in village, public supply	7/22/21	15	40	.138	.168	.003	1.00	4.10	108.60	105.00	5.80	650	550	+	+	−	..
Port Henry	Raw Bartell supply, public supply	11/ 4/21	25	Trace	.010	.134	Trace	.060	4.80	32.50	3.00	7.10	25	450	+	−	−	..
Port Henry	Raw Malone spring, public supply	11/ 4/21	Trace	0	.004	.012	.000	.060	1.80	84.30	68.00	1.00	25	200	+	−	−	..
Port Henry	Clear water reservoir, filtered water, public supply	11/ 4/21	Trace	0	.002	.054	.000	.200	2.60	75.70	69.00	3.20	300	300	−	−	−	..
Port Henry	Witherbee spring, public supply	11/ 4/21	0	0	.002	.018	.000	1.00	2.60	128.60	123.00	1.80	21	50	−	−	−	..
Port Henry	Surface of ice fields on Lake Champlain, 300 feet from brook	2/15/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	650	44,000	+	+	+	..
Port Henry	Surface water and ice from ice field	2/15/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,000	130,000	+	+	+	..
Port Henry	Mouth of brook at lake, 600 feet from sewer opening	2/15/21	15	3	.012	.154	.005	.300	2.60	44.30	40.00	5.10	4,900	74,000	+	+	+	..
Port Jervis	Raw Neversink river, public supply	10/ 6/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70	450	+	−	−	..
Port Jervis	Chlorinated Neversink river, public supply	10/ 6/21	0	5	.002	.050	Trace	.020	1.70	26.00	19.00	3.00	3	1	−	−	−	..
Port Jervis	Reservoir No. 1, chlorinated, public supply	10/ 6/21	0	3	.002	.104	Trace	.020	1.40	16.90	14.50	3.30	19	60	+	−	−	..
Port Jervis	Tap, public supply	10/ 6/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	23	−	−	−	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS — Free ammonia	Albuminoid ammonia	Nitrites	Nitrates	Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C. 37° C.	20° C.	B. COLI TYPE (+ = PRESENT) (— = ABSENT) 10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Poughkeepsie Hudson River State Hospital	Well at Traver's farm	4/13/21	...	...	...	...	...	...	4.00	...	...	...	3	50	—	—	—	..
Poughkeepsie Hudson River State Hospital	Well at Moore farm	4/13/21	...	...	...	...	...	...	5.00	...	...	...	19	10	—	—	—	..
Poughkeepsie Hudson River State Hospital	Cistern water at Winslow farm	4/13/21	...	...	...	...	...	...	5.00	...	...	...	180	7,700	—	—	—	..
Poughkeepsie	Raw river water, public supply	4/13/21	30	20	.042	.170	.008	.140	3.10	40.30	32.00	4.80	1,100	5,400	+	+	+	..
Poughkeepsie	Filtered water, public supply	4/13/21	20	0	.002	.056	Trace	.240	2.70	37.70	29.00	4.00	7	30	—	—	—	..
Town of Poughkeepsie	Vassar Brook	10/27/21	...	...	...	...	...	...	...	...	...	...	1,400	3,500	+	+	—	..
Randall's Island (House of Refuge)	Tap at primary wash room	4/14/21	...	...	...	...	...	...	...	...	...	...	11	30	—	—	—	..
Randall's Island (House of Refuge)	Tap at main kitchen	4/14/21	...	...	...	...	...	...	...	...	...	...	10	48	—	—	—	..
Randall's Island (House of Refuge)	Tap at officers' quarters	4/14/21	...	...	...	...	...	...	...	...	...	...	19	40	—	—	—	..
Randall's Island (House of Refuge)	Tap at Central Dome	4/14/21	...	...	...	...	...	...	...	...	...	...	5	53	—	—	—	..
Randall's Island (House of Refuge)	Tap at 119th street	4/14/21	...	...	...	...	...	...	...	...	...	...	10	29	—	—	—	..
Randall's Island (House of Refuge)	Tap at boys' dining room	9/ 8/21	...	...	...	...	...	...	...	...	...	...	24	7	+	+	+	..
Randall's Island (House of Refuge)	Tap at primary department	9/ 8/21	...	...	...	...	...	...	...	...	...	...	34	8	+	+	+	..
Randall's Island (House of Refuge)	Tap at officers' quarters	9/ 8/21	...	...	...	...	...	...	...	...	...	...	45	10	+	+	—	..
Randolph	Spring No. 1, proposed supply, public supply	4/ 2/21	...	...	...	...	...	...	...	...	...	...	110	140	+	—	—	..
Randolph	Spring flow, public supply	4/ 2/21	0	0	.002	.002	.001	.300	2.20	91.40	90.00	1.50	90	160	—	—	—	..
Randolph	Tail race of East Randolph pumping station, public supply	4/ 2/21	...	...	...	...	...	...	...	...	...	...	65	110	—	—	—	..
Randolph	Tap, public supply	4/ 2/21	0	0	.002	.022	.001	.120	3.40	97.20	95.00	1.60	22	50	—	—	—	..
Randolph	Dug well	5/21/21	...	...	...	...	...	...	3.00	...	...	...	21	12,000	—	—	—	..
Randolph	Flowing well, public supply	5/21/21	0	0	.002	.016	Trace	.200	2.70	108.60	103.50	2.70	0	1	—	—	—	..

Randolph	Stream entering reservoir, public supply	5/21/21	0	0	.002	.022	Trace	.240	2.10	84.60	75.00	1.70	33	800	—	—	—	..
Raquette Lake	Reservoir, public supply	8/29/21	....	....	....	....	....	....	....	....	....	....	500	2,500	—	—	—	..
Raquette Lake	Tap at railroad tracks, public supply	8/29/21	55	Trace	.002	.158	.002	.060	1.80	23.40	13.00	8.50	750	1,200	+	—	—	..
Ravena	Untreated creek water before application of chloride of lime, public supply	12/23/21	....	....	....	....	....	....	....	....	....	....	230	200	+	+	+	..
Ravena	Tap, chlorinated water, public supply	12/23/21	Trace	Trace	.002	.056	Trace	.160	2.50	68.60	54.00	2.90	17	1	—	—	—	..
Ravena	Tap at McCollough's drug store, chlorinated water, public supply	12/23/21	....	....	....	....	....	....	....	....	....	....	20	2	—	—	—	..
Rensselaer	Raw water, public supply	4/26/21	0	5	.020	.200	.003	.100	3.50	42.90	35.00	10.30	260	1,900	+	+	—	..
Rensselaer	Filtered and chlorinated, public supply	4/26/21	0	0	.014	.042	Trace	.160	3.80	44.30	35.00	4.00	2	1	—	—	—	..
Rhinebeck	Tap, public supply	12/23/21	....	....	....	....	....	....	....	....	....	....	25	90	—	—	—	..
Richfield Springs	Inlet from Allen Lake at upper reservoir, public supply	5/14/21	15	Trace	.018	.150	Trace	.020	1.70	80.60	72.00	4.80	70	300	+	—	—	..
Richfield Springs	Lower reservoir, public supply	5/14/21	....	....	....	....	....	....	....	....	....	....	22	20	—	—	—	..
Richfield Springs	Filtered water, public supply	5/14/21	0	0	.018	.094	Trace	.020	1.20	76.00	74.00	3.60	1,300	2.600	—	—	—	..
Richfield Springs	Tap, public supply	5/14/21	....	....	....	....	....	....	....	....	....	....	6	50	—	—	—	..
Ripley	Upper reservoir, public supply	10/24/21	15	3	.018	.110	Trace	.100	1.80	83.20	72.00	3.60	1,500	1.400	—	—	—	..
Ripley	Lower or distributing reservoir, public supply	10/24/21	....	....	....	....	....	....	....	....	....	....	110	140	+	—	—	..
Ripley	Tap No. 1, public supply	10/24/21	....	....	....	....	....	....	....	....	....	....	60	1,800	—	—	—	..
Ripley	Tap No. 2, public supply	10/24/21	....	....	....	....	....	....	....	....	....	....	1,200	....	—	—	—	..
Rochester (State Hospital)	Lake farm supply	3/22/21	0	0	.004	.010	Trace	.300	3.40	300.00	203.00	1.60	1	5	—	—	—	..
Rochester (State Hospital)	Well at hospital	3/22/21	0	0	.002	.016	.001	.200	22.00	357.00	257.00	2.00	150	1,300	—	—	—	..
Rochester (State Hospital)	City supply	3/22/21	0	2	.006	.106	.001	.160	2.80	75.70	65.00	2.50	75	2,100	—	—	—	..
Rome	Reservoir, public supply	3/12/21	....	....	....	....	....	....	....	....	....	....	850	8,200	+	+	—	..
Rome	Tap, public supply	3/12/21	....	....	....	....	....	....	....	....	....	....	90	40	—	—	—	..
Rome	Raw water, storage reservoir, public supply	7/21/21	....	....	....	....	....	....	....	....	....	....	450	1,600	+	+	+	..
Rome	Chlorinated water, second house below chlorination plant, public supply	7/21/21	....	....	....	....	....	....	....	....	....	....	106,000	....	+	+	—	..
Rome	Tap, public supply	7/21/21	45	0	.010	.162	.002	.240	1.80	38.00	37.00	9.50	77,000	....	+	+	—	..
Rome	Reservoir untreated No. 1, public supply	12/16/21	....	....	....	....	....	....	....	....	....	....	20	120	+	—	—	..
Rome	First house below chlorination plant, treated water, public supply	12/16/21	....	....	....	....	....	....	....	....	....	....	2	2	—	—	—	..
Rome	Tap at City Hall, treated water, public supply	12/16/21	....	....	....	....	....	....	....	....	....	....	2	4	—	—	—	..
Roscoe	Tap at R. R. station, public supply	10/31/21	....	....	....	....	....	....	....	....	....	....	20,500	20,000	+	—	—	..
Roscoe	Tap at drug store, public supply	10/31/21	5	0	.002	.038	.002	.300	1.20	20.80	18.00	2.60	....	....	....	....	....	..
Rosendale	Low service, public supply	6/11/21	5	0	.008	.048	.005	.200	1.30	42.90	38.00	2.10	400	250	—	—	—	..
Rosendale	High service, public supply	6/11/21	0	0	.006	.098	.003	.060	1.70	38.00	35.00	....	850	1,100	—	—	—	..
Rouses Point	Lake Champlain inlet 1,200 feet from shore, public supply	6/14/21	....	....	....	....	....	....	....	....	....	....	12	110	+	—	—	..
Rouses Point	Lake Champlain 50 feet north of intake 1,200 from shore, public supply	6/14/21	....	....	....	....	....	....	....	....	....	....	19	140	—	—	—	..
Rouses Point	Tap at health officer's residence, public supply	6/14/21	....	....	....	....	....	....	....	....	....	....	55	1,800	—	—	—	..
Rouses Point	Tap in basement of public school, public supply	6/14/21	....	....	....	....	....	....	....	....	....	....	10	500	+	—	—	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	Nitrogen as —				Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	Bacteria per c. c.		B. Coli Type (+ = present) (— = absent)			
					Free ammonia	Albuminoid ammonia	Nitrites	Nitrates					37° C.	20° C.	10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Rouses Point	North toilet hose faucet, public supply	6/14/21	0	15	.006	.130	.002	.060	2.30	38.00	36.00	4.90	10	40	+	—	—	..
Rouses Point	Lake Champlain near outlet, public supply	8/20/21	....	....	....	....	....	....	....	....	....	....	3,500	10,000	+	+	+	..
Rouses Point	Tap at hotel near R. R. station, public supply	8/20/21	....	....	....	....	....	....	....	....	....	....	1,100	9,400	—	—	—	..
Rouses Point	Tap at Dr. Marne's residence, near pumping station, public supply	8/20/21	Trace	Trace	.018	.102	.002	.020	1.90	4.70	46.00	3.70	300	1,000	—	—	—	..
Rouses Point	Tap at Monette store, public supply	8/20/21	....	....	....	....	....	....	....	....	....	....	400	600	—	—	—	..
Rouses Point	Tap at garage, public supply	8/20/21	....	....	....	....	....	....	....	....	....	....	28,000	207,000	—	—	—	..
Sacandaga Park	Tap at Mr. Sweet's residence, public supply	5/25/21	5	0	.002	.030	.001	.060	.70	32.50	9.50	1.80	3	20	+	—	—	..
Sacandaga Park	Tap at Northville R. R. station, public supply	5/25/21	....	....	....	....	....	....	....	....	....	....	40	60	—	—	—	..
Sag Harbor	Lizonee creek, public supply	8/11/21	35	0	.008	.166	Trace	.040	10.00	11.90	11.00	5.70	600	1,000	+	+	—	..
Sag Harbor	Tap at pumping station, chlorinated water, public supply	8/11/21	....	....	....	....	....	....	....	....	....	....	425	31,000	—	—	—	..
Sag Harbor	Tap at R. R station, public supply	8/11/21	35	0	.002	.152	Trace	.040	10.00	13.50	10.00	7.00	1,300	44,000	—	—	—	..
St. Johnsville	Distributing reservoir No. 28, public supply	3/ 8/21	....	....	....	....	....	....	....	....	....	....	29	450	+	—	—	..
St. Johnsville	Small spring reservoir, public supply	3/ 8/21	Trace	0	.028	.054	.001	.500	1.60	194.20	171.00	1.50	....	....	....	....	....	..
St. Johnsville	Tap at J. Sheimer's residence, public supply	3/ 8/21	....	....	....	....	....	....	....	....	....	....	8	275	—	—	—	..
St. Johnsville	Tap at Conrad residence, public supply	3/ 8/21	....	....	....	....	....	....	....	....	....	....	17	210	—	—	—	..
St. Johnsville	Tap at Englehart residence, public supply	3/ 8/21	0	0	.016	.080	.001	.500	1.50	123.50	101.00	1.50	21	210	—	—	—	..
St. Johnsville	Tap at Brown residence, small spring supply, public supply	3/ 8/21	....	....	....	....	....	....	....	....	....	....	17	80	—	—	—	..
Salamanca	Tap at Erie R R. station, public supply	10/17/21	0	0	.002	.004	.001	.600	5.00	117.20	102.50	.90	30,500	45,000	—	—	—	..
Salamanca	Tap at B. R. & P. R. R. station, public supply	10/17/21	0	0	.002	.004	.001	.800	3.60	102.80	86.00	1.20	400	600	—	—	—	..
Salamanca	Tap, public supply	10/17/21	0	0	.002	.002	.001	1.20	4.40	108.60	103.00	.90	450	850	—	—	—	..
Saranac Lake	Reservoir, public supply	11/ 7/21	....	....	....	....	....	....	....	....	....	....	19	45	—	—	—	..
Saranac Lake	Tap at pumping station, public supply	11/ 7/21	5	5	.002	.134	Trace	.040	1.20	18.20	17.00	3.90	4	5	—	—	—	..

Saratoga Springs	Reservoir, raw water, public supply	8/18/21											300	1,000	—	—	—	
Saratoga Springs	Tap at pumping station, public supply	8/18/21											70,000	136,000	—	—	—	
Saratoga Springs	Tap at fire house, public supply	8/18/21											36,000	72,000	—	—	—	
Saratoga Springs	Tap at Public Works, public supply	8/18/21	0	5	.002	.126	.001	.040	1.50	65.70	62.00	3.40						
Saratoga Springs	Tap at City Hall, public supply	8/18/21											125,000	190,000	—	—	—	
Scarsdale	Tap, public supply	8/ 4/21	0	15	.038	.082	Trace	.060	4.50	50.70	31.00	3.60	6	25	—	—	—	
Schenectady	Well No. 1	3/18/21	0	0	.002	.048	.001	.280	3.40	99.20	83.00	2.20	2	5	+	—	—	
Schenectady	Well No. 2	3/18/21	0	0	.002	.022	.004	.200	3.80	134.20	130.00	1.50	0	5	—	—	—	
Schenectady	Tap at Myer's farm, public supply	3/18/21	0	0	.002	.024	.001	.200	3.00	125.80	119.00		0	5	—	—	—	
Schenectady	Tap at Dr. Duryee's residence, public supply	3/18/21	0	0	.002	.038	.001	.280	3.60	125.80	120.00	1.40	2	70	+	—	—	
Seneca Falls	Raw water, public supply	3/22/21	0	3	.010	.108	.003	.300	50.00	120.00	100.00	4.50	70	550	—	—	—	
Seneca Falls	Filtered water, public supply	3/22/21	0	0	.014	.088	.002	.200	50.00	117.20	100.00	4.90	10	80	—	—	—	
Seneca Falls	Tap at W. Fall street, public supply	3/22/21											3	3	+	—	—	
Sharon Springs	Smith spring, public supply	6/16/21											65	180	—	—	—	
Sharon Springs	Upper spring, public supply	6/16/21											20	180	—	—	—	
Sherburne (Rocky Crest Sanitarium)	Tap	6/14/21											11	40	+	+	+	
Sherburne (Rocky Crest Sanitarium)	Spring	6/14/21	0	0	.002	.002	.001	.800	4.40	215.00	148.00	.50	13	1,100	+	+	+	
Shortsville	Well, sample A, public supply	12/ 3/21							7.50				1	5	—	—	—	
Shortsville	Well, sample B, public supply	12/ 3/21							7.00				2	5	—	—	—	
Shortsville	Tap at R. R. station, public supply	12/ 3/21							13.00				0	80	—	—	—	
Shortsville	Tap at Mills' residence, public supply	12/ 3/21							9.00				21	80	—	—	—	
Sidney	Reservoir, Peckham Brook, public supply	7/19/21	40	Trace	.002	.240	.002	.040	2.20	20.80	17.00	7.50	325	600	+	+	+	
Sidney	Reservoir No. 2, unfiltered Collor Pond supply, public supply	7/19/21	12	0	.002	.128	.002	.040	2.80	25.40	20.00	4.00	65	70	+	—	—	
Sidney	Tap at Hotel de Amber filtered water, public supply	7/19/21											41	120	—	—	—	
Sidney Center	Reservoir, public supply	3/ 4/21											2,700	16,000	+	+	+	
Sidney Center	Tap at Borden's, public supply	3/ 4/21	20	40	.146	.192	.010	.030	2.00	22.10	21.00	5.90	800	3,300	+	+	—	
Silver Creek	Reservoir, public supply	5/14/21											42	100	+	—	—	
Silver Creek	Tap, public supply	5/14/21	8	5	.004	.092	Trace	.060	2.10	80.00	68.00	5.10	110	1,200	—	—	—	
Sonyea	Raw Creek water	10/29/21	Trace	3	.012	.074	Trace	Trace	7.00	165.40	158.00	2.10	33	300	+	—	—	
Sonyea	Chlorinated creek water	10/29/21											1	8	—	—	—	
Sonyea	Chlorinated and softened creek water	10/29/21											0	950	—	—	—	
Sonyea	Chlorinated, softened and filtered creek water	10/29/21	0	0	.002	.032	.000	Trace	8.20	102.80	74.00	1.10	0	220	—	—	—	
Sonyea	Spring supply	10/29/21	Trace	3	.528	.044	.300	.400	17.00	271.50	210.00	2.10	0	100	+	—	—	
Stamford	Tap at garage, public supply	9/15/21	35	5	.036	.122	.003	.200	2.40	27.30	22.00	3.50	3,250	16,000	+	—	—	
Stamford	Tap at private house, public supply	9/15/21											3,200	10,300	+	—	—	
Stamford	Tap at drug store, public supply	9/15/21											6	25	—	—	—	
Stamford	Tap at livery stable, public supply	9/15/21											14	25	—	—	—	
Stamford	Driven well	9/20/21	0	10	.032	.026	.002	.080	36.00	38.00		1.20	49	20	+	—	—	
Stamford	Landons	9/20/21	20	10	.008	.176	.003	.100	6.20	36.40	34.00	5.20	275		+	+	—	
Stamford	Churchill spring, public supply	9/24/21											7,200	40,000	+	+	—	

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS —				Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C.		B. COLI TYPE (+ = PRESENT) (— = ABSENT)			
					Free ammonia	Albuminoid ammonia	Nitrites	Nitrates					37° C.	20° C.	10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Stamford	Churchill Lake	9/24/21	0	10	.032	.248	.003	.020	3.00	31.20	25.00	6.70	500	250	+	+	—	..
Stamford	Old reservoir, public supply	9/24/21	Trace	0	.028	.062	.001	.100	1.20	31.20	28.00	1.70	13,500	50,000	+	+	—	..
Stamford	Upper reservoir, public supply	9/24/21	....	....	....	....	....	....	....	....	....	....	850	....	+	—	—	..
Stamford	Tap, public supply	9/24/21	0	10	.014	.116	.008	.300	2.60	32.50	23.00	3.60	2,000	74,000	+	—	—	..
Stamford	Pump discharge from Churchill Lake, public supply	10/ 3/21	0	40	.006	.274	.002	.020	1.60	36.40	35.00	6.50	1,600	6,300	+	+	—	..
Stamford	Tap, public supply	10/ 3/21	....	....	....	....	....	....	....	....	....	....	110	1,300	—	—	—	..
Stockbridge	Petersboro Creek, proposed public supply	5/31/21	25	3	.036	.122	Trace	.120	1.70	186.50	179.00	6.20	....	....	....	....	....	..
Summitville	Tap at R. R. station, public supply	11/ 1/21	5	0	.002	.014	Trace	.040	1.00	15.60	11.00	1.60	10	400	+	—	—	..
Summitville	Tap at Jones' Hotel, public supply	11/ 1/21	....	....	....	....	....	....	....	....	....	....	8	425	+	+	—	..
Summitville	Tap, R. R. supply, stream as it enters reservoir	11/ 1/21	....	....	....	....	....	....	....	....	....	....	25	120	+	—	—	..
Syracuse	Lake intake, public supply	7/ 1/21	....	....	....	....	....	....	....	....	....	....	100	270	—	—	—	..
Syracuse	North well of gate house outlet well, public supply	7/ 1/21	....	....	....	....	....	....	....	....	....	....	11	550	+	—	—	..
Syracuse	Tap at express office, public supply	7/ 1/21	....	....	....	....	....	....	....	....	....	....	50	170	+	—	—	..
Syracuse	Tap at City Hall, public supply	7/ 1/21	0	0	.006	.080	.001	.300	4.00	94.20	88.00	2.70	45	230	+	—	—	..
Syracuse (State School for Mental Defectives)	Well	9/27/21	0	15	.002	.022	.007	4.00	6.10	929.00	251.00	1.30	3,000	6,000	—	—	—	..
Thendara	Spring flow to intake basin	8/29/21	....	....	....	....	....	....	....	....	....	....	130,000	....	—	—	—	..
Thendara	Tap at Van Auken's Hotel	8/29/21	0	0	.002	.022	.002	.060	.80	15.60	14.00	3.00	160,000	300,000	—	—	—	..
Thendara	Tap at R. R. station	8/29/21	....	....	....	....	....	....	....	....	....	....	3	70	—	—	—	..
Theresa	Tap, untreated water, public supply	9/23/21	15	Trace	.014	.178	.001	.040	3.80	65.70	65.00	8.20	4,700	11,000	+	+	+	..
Theresa	Water above intake, public supply	10/10/21	5	5	.042	.224	.003	.020	3.80	67.10	65.00	5.80	3,300	1,700	+	+	+	..
Theresa	Service pipe, public supply	10/10/21	5	3	.002	.162	.001	.020	4.60	67.10	65.00	4.80	4,100	24,000	+	—	—	..
Ticonderoga	Reservoir, Chilson supply, public supply	6/ 4/21	....	....	....	....	....	....	....	....	....	....	130	700	+	+	—	..
Ticonderoga	Main spring, public supply	6/ 4/21	....	....	....	....	....	....	....	....	....	....	47,000	240,000	—	—	—	..
Ticonderoga	Chilson pond, public supply	6/ 4/21	....	....	....	....	....	....	....	....	....	....	27,000	69,000	+	+	+	..
Ticonderoga	Lake George supply at intake, public supply	6/ 4/21	5	Trace	.008	.096	.012	Trace	1.40	31.20	22.00	1.90	50	400	—	—	—	..
Ticonderoga	Tap, public supply	6/ 4/21	5	10	.002	.082	.001	Trace	.80	80.60	77.00	3.65	3,100	5,800	+	—	—	..
Tonawanda	Raw water, public supply	8/27/21	0	Trace	.030	.086	.001	.020	10.30	108.60	93.00	2.60	680	3,000	+	+	—	..

Tonawanda	Coagulated water, public supply	8/27/21	....	....	....	....	....	....	....	....	....	....	1,000	3,000	+	+	+	..
Tonawanda	Filtered water, not chlorinated, public supply	8/27/21	....	....	....	....	....	....	....	....	....	....	560	1,000	+	—	—	..
Tonawanda	Filtered and chlorinated, public supply	8/27/21	0	0	.024	.082	.001	.020	10.20	108.60	92.00	2.50	640	6,000	—	—	—	..
Tonawanda	Tap, public supply	8/27/21	....	....	....	....	....	....	....	....	....	....	9	950	—	—	—	..
Troy	Tap, upper service, public supply	8/22/21	....	....	....	....	....	....	....	....	....	....	1,100	3,700	—	—	—	..
Troy	Tap, lower service, public supply	8/23/21	5	5	.008	.142	.001	.060	2.00	30.60	25.00	2.50	300	725	—	—	—	..
Turin	Creek, public supply	7/30/21	30	20	.010	.182	.004	.500	1.60	58.60	57.00	8.30	90,000	99,000	+	+	+	..
Turin	Spring, public supply	7/30/21	....	....	....	....	....	....	....	....	....	....	15,000	27,500	+	+	+	..
Turin	Creek, proposed auxiliary supply, sample No. 2	9/13/21	....	....	....	....	....	....	....	....	....	....	80,000	100,000	+	—	—	..
Turin	Creek, proposed auxiliary supply, sample No. 1	9/13/21	....	....	....	....	....	....	....	....	....	....	300,000	600,000	+	+	—	..
Turin	Reservoir, public supply	9/13/21	15	0	.042	.038	.001	.120	3.80	61.40	56.00	2.40	120	580	—	—	—	..
Unadilla	Tap, Martin Brook supply, public supply	3/ 3/21	0	10	.006	.062	.008	.160	1.50	26.00	24.00	3.70	600	1,600	+	—	—	..
Unadilla	Reservoir, Kilkenny supply, public supply	3/ 3/21	....	....	....	....	....	....	....	....	....	....	650	1,400	+	—	—	..
Unadilla	Tap, Kilkenny supply, public supply	3/ 3/21	0	0	.004	.056	.001	.100	1.30	23.40	22.00	2.80	200	900	+	—	—	..
Unionville	Well at pumping station, public supply	5/17/21	0	0	.002	.002	Trace	2.40	5.60	54.80	32.00	1.05	51,000	100,000	—	—	—	..
Unionville	Tap, combined supply, public supply	5/17/21	5	3	.002	.062	Trace	.300	3.20	36.40	30.00	2.15	70	3,700	—	—	—	..
Utica	Raw water before entering Bascot reservoir, public supply	7/21/21	....	....	....	....	....	....	....	....	....	....	950	180	—	—	—	..
Utica	Chlorinated water below Bascot reservoir, public supply	7/21/21	....	....	....	....	....	....	....	....	....	....	6	95	—	—	—	..
Utica	Raw water, reservoir No. 4, public supply	7/21/21	....	....	....	....	....	....	....	....	....	....	2,500	4,000	+	+	+	..
Utica	Chlorinated water first tap below chlorination house reservoir, public supply	7/21/21	....	....	....	....	....	....	....	....	....	....	1,100	26,500	+	+	+	..
Utica	Tap, mixture of West Canada Creek and other sources, public supply	7/21/21	30	2	.002	.084	.002	.100	1.50	20.80	18.00	1.50	200	950	+	—	—	..
Walden	Tap at pumping station, public supply	3/17/21	....	....	....	....	....	....	....	....	....	....	225	800	—	—	—	..
Walden	Tap, public supply	3/17/21	0	0	.002	.024	.003	.500	2.00	148.60	116.00	.40	26	170	—	—	—	..
Walton	Tap at Engine House filtered water used in R. R. cars, public supply	7/20/21	20	2	.006	.120	.004	.160	2.30	26.00	23.00	3.50	44	14,000	+	+	—	..
Walton	Tap at 55 West street filtered water, 3rd brook, public supply	7/20/21	....	....	....	....	....	....	....	....	....	....	275	4,600	+	+	—	..
Walton	Bassett spring, unfiltered water, 3rd brook, public supply	7/20/21	....	....	....	....	....	....	....	....	....	....	275	920	+	—	—	..
Walton	Kerr's Creek reservoir, public supply	7/20/21	....	....	....	....	....	....	....	....	....	....	3,200	4,700	+	+	—	..
Walton	East brook, 1st house below filter, public supply	7/20/21	25	Trace	.004	.088	.003	.040	2.00	24.70	21.00	3.20	650	80,000	+	+	—	..
Warrensburg	Tap, public supply	9/20/21	0	0	.006	.050	.002	.040	.70	24.70	22.00	2.60	450	3,700	—	—	—	..
Warsaw	Tap, public supply	10/27/21	10	5	.004	.058	.005	.700	3.20	117.20	115.00	1.80	32	475	+	—	—	..
Warwick	Lower reservoir, public supply	4/27/21	....	....	....	....	....	....	....	....	....	....	30	50	—	—	—	..
Warwick	Middle reservoir, public supply	4/27/21	....	....	....	....	....	....	....	....	....	....	70	300	+	+	—	..
Warwick	Tap, public supply	4/27/21	0	0	.006	.066	Trace	Trace	1.80	48.60	41.00	1.30	7,600	8,800	+	—	—	..
Warwick	Tap, public supply	10/26/21	....	....	....	....	....	....	....	....	....	....	31	30	+	—	—	..
Warwick	Lower reservoir, public supply	11/25/21	....	....	....	....	....	....	....	....	....	....	60	160	+	—	—	..
Warwick	Middle reservoir, public supply	11/25/21	....	....	....	....	....	....	....	....	....	....	700	3,000	+	+	—	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Continued*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	Nitrogen as — Free ammonia	Nitrogen as — Albuminoid ammonia	Nitrogen as — Nitrites	Nitrogen as — Nitrates	Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	Bacteria per c. c. 37° C.	Bacteria per c. c. 20° C.	B. Coli Type (+ = present) (— = absent) 10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Warwick	Upper reservoir, public supply	11/25/21											1,700	4,900	+	+	—	
Warwick	Trp, public supply	11/25/21	Trace	5	.024	.136	Trace	.060	2.80	70.00	59.50	3.80	25	500	—	—	—	
Waterloo	Waste at outlet No. 2, into old canal	10/27/21											3,900	30,000	+	+	—	
Waterloo	Effluent from vitrified sewer, 75 feet west of No. 1 outlet	10/27/21											4	10	—	—	—	
Waterloo	Final effluent, Empire Coke & Gas Co. at outlet	10/27/21											4,800	120,000	+	+	+	
Waterloo	Castle Creek in Geneva 200 feet north of outlet into old canal	10/27/21											78,000	1,000,000	+	+	+	
Waterloo	North Creek in Geneva at outlet to old canal	10/27/21											425	24,000	+	+	+	
Waterloo	Old canal 700 feet west of outlet	10/27/21											28,500	210,000	+	+	—	
Waterloo	Barge Canal at Lake entrance N. E. of Highway Bridge	10/27/21	0	2	.020	.404	.003	.200	75.00	108.60	104.00	3.80	36	4,800	+	+	+	
Waterloo	Old canal at entrance to Barge canal	10/27/21	50	15	3.440	1.090	.060	.100	95.00	214.50	118.00	24.40	8,500	850,000	+	+	+	
Waterloo	Kendig Creek at State Highway	10/27/21	20	40	.006	.334	.005	.120	55.00	157.20	144.00	17.60	200	1,000	+	+	—	
Waterloo	Raw water at Barge Canal intake, public supply	10/27/21	Trace	3	.108	.042	.008	.800	75.00	120.00	102.00	3.90	3,900	8,200	+	+	+	
Waterloo	Settled water prior to filtration, public supply	10/27/21											4,200	12,500	+	+	+	
Waterloo	Filtered water, public supply	10/27/21	0	0	.072	.128	.040	.400	75.00	100.00	82.00	2.70	1,900	29,000	+	+	+	
Waterloo	Tap M., public supply	10/27/21											1	5	+	—	—	
Waterloo	Tap N., public supply	10/27/21											950	1,900	+	+	+	
Waterloo	Raw canal water at intake, public supply	11/16/21	0	Trace	.070	.122	.002	.500	69.00	117.20	101.00	3.00	1,600	13,000	+	+	—	
Waterloo	Coagulated water, public supply	11/16/21											1,100	9,600	+	+	+	
Waterloo	Filter effluent, public supply	11/16/21	0	0	.120	.118	.002	.500	69.50	117.20	97.00	3.00	130	1,100	+	—	—	
Waterloo	Chlorinated water at pumping station, public supply	11/16/21											230	9,200	+	—	—	
Waterloo	Tap at hospital, public supply	11/16/21											180	7,800	+	+	—	
Watertown	Raw water flume, public supply	4/15/21	55	Trace	.004	.120	.005	.200	2.10	29.30	23.00	11.80	100	500	+	+	+	
Watertown	Coagulated water, public supply	4/15/21											30	25	—	—	—	
Watertown	Tap at Laboratory, public supply	4/15/21	0	0	.002	.054	Trace	.100	2.20	29.30	21.00	4.30	2	5	—	—	—	
Watertown	Tap, public supply	4/15/21											2	425	—	—	—	

Watervliet	Raw water, public supply	5/ 6/21	17	40	.006	.174	.005	.200	2.20	67.10	57.00	6.00	110	1,200	+	+	+	..
Watervliet	Filtered water before chlorination, public supply	5/ 6/21	5	0	.002	.092	.000	.200	2.30	67.10	57.00	3.60	8	70	+	+	—	..
Watervliet	Chlorinated and filtered, public supply	5/ 6/21	....	....	....	....	....	....	....	....	....	....	2	8	—	—	—	..
Watervliet	Tap at City Hall, public supply	5/ 6/21	....	....	....	....	....	....	....	....	....	....	2	3	—	—	—	..
Watervliet	Drinking fountain at Post Cafeteria, public supply	6/ 3/21	....	....	....	....	....	....	....	....	....	....	2	3	—	—	—	..
Watervliet	Tap at Post Cafeteria, public supply	7/22/21	....	....	....	....	....	....	....	....	....	....	2	3	—	—	—	..
Watervliet	Tap at Arsenal main office, public supply	7/22/21	....	....	....	....	....	....	....	....	....	....	5	3	—	—	—	..
Watervliet	Tap at Post hospital, public supply	7/22/21	....	....	....	....	....	....	....	....	....	....	6	4	—	—	—	..
Watervliet	Tap at Post hospital, public supply	9/20/21	....	....	....	....	....	....	....	....	....	....	1	1	—	—	—	..
Watervliet	Tap at Post Cafeteria, public supply	9/20/21	....	....	....	....	....	....	....	....	....	....	1	2	—	—	—	..
Watervliet	Tap at Arsenal main office, public supply	9/20/21	....	....	....	....	....	....	....	....	....	....	1	1	—	—	—	..
Watkins	Tap at municipal building, public supply	4/14/21	....	....	....	....	....	....	....	....	....	....	6	8	—	—	—	..
Watkins	Tap at express office, public supply	4/14/21	0	0	.002	.006	.000	.200	73.00	100.00	97.00	2.80	2	8	—	—	—	..
Wayland	Gunlach well, D. L. & W. R. R. station	4/15/21	....	....	....	....	....	....	5.50	....	....	....	85	1,900	—	—	—	..
Wayland	Gunlach Chair Co.	4/15/21	0	0	.090	.088	Trace	.020	5.00	117.20	109.00	1.00	6	2	—	—	—	..
Wayland	Erie depot	4/15/21	....	....	....	....	....	....	....	....	....	....	2	5	—	—	—	..
Wayland	Tap, public supply	4/15/21	0	0	.002	.018	Trace	2.00	4.00	122.80	115.00	1.70	0	15	—	—	—	..
Webster	Nine mile point, public supply	7/22/21	....	....	....	....	....	....	....	....	....	....	10	50	+	+	—	..
Weedsport	Pond in Graham Park, proposed supply, public supply	10/28/21	10	Trace	.116	.110	.015	.300	2.40	443.00	227.00	3.20	10	60	+	+	—	..
Weedsport	Tap, public supply	10/28/21	Trace	0	.004	.060	.002	.040	2.40	543.00	215.00	2.20	8	100	+	—	—	..
Weedsport	Pump discharge at East Brutus, public supply	10/28/21	....	....	....	....	....	....	....	....	....	....	50	5,000	—	—	—	..
Weedsport	Collecting reservoir for springs, public supply	10/28/21	....	....	....	....	....	....	....	....	....	....	16	4,300	+	—	—	..
Weedsport	Tap at pump discharge, public supply	10/28/21	Trace	0	.002	.012	.010	.060	2.20	957.00	270.00	.70	0	15	—	—	—	..
Weedsport	Distributing reservoir, public supply	10/28/21	....	....	....	....	....	....	....	....	....	....	1	80	—	—	—	..
Wells Bridge	Pipe from springs, public supply	3/ 3/21	....	....	....	....	....	....	....	....	....	....	5	25	—	—	—	..
Wells Bridge	Tap, public supply	3/ 3/21	0	0	.002	.030	.001	.060	.60	19.50	16.00	1.90	5	10	—	—	—	..
Wellsville	Raw water at Gate House, public supply	10/31/21	5	4	.004	.050	.000	.200	4.00	32.50	32.00	2.40	275	4,500	+	—	—	..
Wellsville	Settled water at Gate House, public supply	10/31/21	....	....	....	....	....	....	....	....	....	....	110	5,200	+	—	—	..
Wellsville	Filtered and chlorinated water at pumping station, public supply	10/31/21	....	....	....	....	....	....	....	....	....	....	4	3	—	—	—	..
Wellsville	Tap at City Hall, public supply	10/31/21	....	....	....	....	....	....	....	....	....	....	3	1	—	—	—	..
Wellsville	Tap at R. R. station, public supply	10/31/21	0	0	.006	.054	.000	.140	6.20	40.30	39.00	2.00	4	0	—	—	—	..
West Exeter	Horton Creek, public supply	7/21/21	....	....	....	....	....	....	....	....	....	....	240,000	296,000	..	..	+	+
Westfield	Tap, public supply	7/22/21	0	5	.001	.054	.003	.040	1.90	125.30	121.00	2.70	63,000	137,000	+	+	+	..
West Haverstraw (N. Y. State Hospital for Crippled and Deformed Children)	Well	2/14/21	0	0	.002	.004	.003	.300	3.60	110.00	90.00	.90	....	....	..	..	..	..
Whitehall	Raw water, public supply	6/ 4/21	....	....	....	....	....	....	....	....	....	....	375	500	+	—	—	..
Whitehall	Reservoir, public supply	6/24/21	....	....	....	....	....	....	....	....	....	....	60	130	—	—	—	..
Whitehall	Chlorinated water from pump discharge, 13 pulsations per minute, public supply	6/ 4/21	Trace	20	.014	.098	.003	.060	2.60	83.20	78.50	2.20	19	140	—	—	—	..

ANALYTICAL RESULTS OF SAMPLES OF WATER — (*Concluded*)

CITY, TOWN OR VILLAGE	Source	Date	Color	Turbidity	NITROGEN AS —				Chlorine as chlorides	Hardness, total	Alkalinity	Oxygen consumed	BACTERIA PER C. C.		B. COLI TYPE (+ = PRESENT) (— = ABSENT)			
					Free ammonia	Albuminoid ammonia	Nitrites	Nitrates					37° C.	20° C.	10 c.c.	1 c.c.	1-10 c.c.	1-100 c.c.
Whitehall	Chlorinated water from pump discharge, 20 pulsations per minute, public supply	6/ 4/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19	42	—	—	—	..
Whitehall	Tap, public supply	6/ 4/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14	16	—	—	—	..
White Plains	Raw water from lower reservoir, public supply	10/ 8/21	0	15	.078	.218	.005	.020	5.00	24.70	21.00	5.40	2,700	12,500	—	—	—	..
White Plains	Dug well and reservoir treated water, public supply	10/ 8/21	0	15	.082	.240	.005	.020	6.00	28.60	23.00	5.10	2,700	....	—	—	—	..
White Plains	Drew driven wells, public supply	10/ 8/21	0	0	.002	.016	.002	.700	7.00	150.00	145.50	1.20	55,000	190,000	—	—	—	..
White Plains	Tap at R. R. station, public supply	10/ 8/21	0	Trace	.006	.014	.002	.700	7.00	132.90	126.00	1.80	1,200	82,000	—	—	—	..
Williamson	Raw water at plant, public supply	8/12/21	0	5	.008	.104	.002	.060	9.90	97.20	91.00	4.90	4,500	21,000	—	—	—	..
Williamson	Treated water at plant, public supply	8/12/21	0	0	.002	.054	.001	.100	10.40	85.80	81.00	1.90	390	280	—	—	—	..
Williamson	Tap at Dr. Carr's office treated water, public supply	8/12/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	100	—	—	—	..
Wolcott	Pipe from well proposed auxiliary, public supply	10/13/21	0	0	.180	.038	.002	Trace	9.40	241.00	227.00	1.50	450	450	—	—	—	..
Yonkers	Raw water from Grassy Sprain reservoir, public supply	10/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17	100	—	—	—	..
Yonkers	Chlorinated Grassy Sprain supply, public supply	10/10/21	30	15	.044	.276	.002	.060	8.00	51.40	48.00	5.90	1,700	87,000	—	—	—	..
Yonkers	Raw Sawmill river water, public supply	10/10/21	30	10	.456	.134	.150	1.00	11.00	105.80	103.00	5.10	375	10,000	+	+	+	..
Yonkers	Filtered and chlorinated Sawmill river water, public supply	10/10/21	0	0	.010	.082	.002	1.20	11.00	105.80	104.00	3.40	1	10	—	—	—	..
Yonkers	Tap at R. R. station, public supply	10/10/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	210	1,400	—	—	—	..
Youngstown	Filtered water, public supply	6/28/21	0	Trace	.020	.110	.001	4.80	14.00	108.60	93.00	3.65	50,000	290,000	—	—	—	..
Youngstown	Tap at Ontario House, public supply	6/28/21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18,000	82,000	—	—	—	..

PART II

Division of Sanitation

NEW YORK STATE DEPARTMENT OF HEALTH

Division of Sanitary Engineering (abolished July 1, 1921)

Chief Engineer	Theodore Horton
Principal Assistant Engineer	Charles A. Holmquist
Assistant Engineer	Henry Ryon
Assistant Engineer	Earl Devendorf
Assistant Engineer	W. W. Young
Assistant Engineer	Alfred Mullikin
Assistant Engineer	Albert I. Howd
Assistant Engineer	Wm. C. Emigh
Sanitary Inspector	Wendell J. Erickson
Sanitary Inspector	J. H. Weber
Sanitary Inspector	Charles T. Male
Sanitary Inspector	N. H. Baier
Engineering Draftsman	Yu Chi Ma

Division of Sanitation (created July 1, 1921)

Director	Charles A. Holmquist
Assistant Sanitarian	Earl Devendorf
Assistant Sanitarian	W. W. Young
Assistant Sanitarian	Alfred Mullikin
Assistant Sanitarian	Albert I. Howd

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REPORT OF THE DIRECTOR

Hermann M. Biggs, M. D., *Commissioner of Health, Albany, N. Y.:*

Dear Sir.— I have the honor to submit herewith the annual report of the Division of Sanitation for 1921.

The year 1921 has been one of unusual activity and far reaching importance to this branch of the work of the department. By legislative amendments to the Public Health, Village and Town Laws, which went into effect July 1, the Division of Sanitary Engineering was changed to a Division of Sanitation and the function of passing upon plans for sewerage and sewage and waste disposal was transferred to the State Engineer. As the result of these changes the division was reorganized and its force reduced approximately 60 per cent. Some positions were transferred to the State Engineer and other positions were abolished.

The new law (chapter 510 of the Laws of 1921) provides in general that plans for sewerage and sewage disposal, formerly passed upon by this department under the provisions of the Public Health, Village and Town Laws, must now be submitted to and receive the approval of the State Engineer before any permit issued by the State Commissioner of Health for the discharge of sewage or industrial wastes into the waters of the State becomes effective. Under this law application for the issuance of a permit should be made to the State Commissioner of Health when the plans for sewerage and sewage disposal are submitted to the State Engineer, but in general a permit will not be issued by the Commissioner of Health until the plans are approved by the State Engineer.

Except as indicated above, the work performed by the new division is substantially the same as that of the old one and is as follows: (1) The supervision and control over the sanitary quality of public water supplies, including field investigations, analytical studies and reports; (2) the enactment and enforcement of rules and regulations for the protection of public water supplies from contamination; (3) examination and approval of plans and expenditures for county mosquito extermination commissions; (4) investigation of public nuisances; (5) the examination into conditions of nuisance affecting life and health under order from the Governor; (6) investigations and studies of stream pollution and operation of water purification and sewage disposal plants; (7) examination and reports of sanitary conditions, equipment and operation of milk pasteurizing plants; (8) special investigations of sanitary conditions of parks, camps, fair grounds and other public gathering places; (9) examination of the sanitary conditions of state institutions; (10) advice to municipalities, corporations and individuals upon sanitary matters such as water supply, garbage disposal, plumbing, ventilation, drainage and general sanitation; (11) furnishing data to the Surgeon-General of United States Public Health Service regarding sanitary quality of water supplies used by common carriers in interstate traffic; (12)preparation of permits for the discharge of sewage, sewage effluent and industrial wastes.

Some idea as to the volume of the work handled by the Divisions of Sanitary Engineering and Sanitation during 1921 may be gained from the following table which gives numerical summaries of the more important lines of work and for purposes of comparison the same data for the years 1919 and 1920:

	1919	1920	1921
Letters and other correspondence referred to Division.	2,666	3,020	3,344
Letters and reports sent out	4,323	4,444	5,356
Plans examined and permits issued	125	127	81
Investigation of public water supplies	154	193	205
Investigation of sanitary conditions of state institutions	14	30	24
Investigation of sewage disposal plants	17	16	21
Investigation relating to sewerage systems	10	13	15
Investigation of milk pasterurizing plants	403	166	190
Investigation of stream pollution and nuisances	47	68	46
Conferences held with local officials	328	357	269
Lectures and addresses by staff	6	7	9

It will be noted from the above table that notwithstanding a reduction of approximately 60 per cent in the force of the division on July 1, the volume of matters handled in 1921 was considerably greater than the year before. In fact, the number of matters referred to the Division of Sanitation and the number of letters and reports sent out during the last six months of 1921 was 20 per cent greater than for the corresponding six months of the year 1920. This was due partly to the increasing demand in the State for assistance and advice from the division on matters of sanitation and partly to the long continued drought last summer which tended to deplete many public water supplies and give rise to very many complaints against nuisances and cases of stream pollution.

In order to handle the very large amount of work since July 1 it has been necessary for every member of the Division of Sanitation to work at his maximum capacity and efficiency, to put in considerable overtime, to curtail and postpone vacations and in many instances to work Saturday afternoons and Sundays. Notwithstanding these efforts to meet the demands made upon the Division, it has been impossible to comply with all requests for inspections and assistance, and such requests have repeatedly been received when every available man was in the field on other work. This has, of course, resulted in considerable delay and loss of efficiency. In order to properly handle the work and relieve the heavy burden that has been thrown upon the division and enable it to resume such work as inspection of milk pasteurizing plants and state institutions it is imperative that additional men qualified to satisfactorily perform the highly specialized work required in the division be provided.

No branch of the work of the Division of Sanitation is of greater importance than the work of investigating and supervising the sanitary quality of public water supplies, considering the fact that about 8,500,000 people of the state are served by such supplies. This work which has constituted one of the major functions of the Division of Sanitary Engineering since it was established in 1906 has been given special attention by the new Division of Sanitation. All of the nearly 550 public water supplies in the state have now been investigated once and many of them a number of times. Since 1906 the number of public water supplies in the state has increased from about 400 to approximately 550 and the number of persons served by such supplies has increased from about 6,000,000 to nearly 8,500,000. In the same period the number of supplies receiving purification or treatment has increased from 50 to 130 and the number of persons supplied by filtered or chlorinated water has increased from 700,000 to about 7,000,000. During the past year water filtration plants have been installed and put in operation at Tonawanda, Middleport and Wellsville, while the cities of Buffalo and North Tonawanda have voted to install filtration plants. Chlorination plants or additional units for the treatment of water have been installed at Ithaca, Batavia, Jamaica, Larchmont, Little Falls, Ossining, Antwerp, Catskill, Marcy (State Hospital), Monticello, Youngstown, Fallsburg, Fleischmanns, Grand Gorge, Haverstraw, Johnstown, Ithaca (Cornell University), Port Jervis, Wellsville, Oyster Bay, Huntington, Medina, Woodhaven, Beacon, Hyde Park-on-Hudson and by New York City at Grant City, Rockville Centre, Baldwins and Valhalla.

In this connection it might be pointed out that owing to the lack of rain last summer which resulted in a general shortage of water and depletion of many of the smaller supplies, making it necessary to augment such supplies by pumping from polluted and questionable sources, an unusually large number of requests were received by the division for advice and assistance in improving and safeguarding the sanitary qualities of such supplies. Whenever this condition was called to our attention the emergency chlorine apparatus of the department was installed, water officials were instructed as to its use and the apparatus was left in operation until the municipality could secure one of its own. The demand for assistance of this kind became so great that it was necessary for us to secure an additional chlorine apparatus, but even the extra equipment was inadequate to meet the demand and it was necessary for us to install cruder but nevertheless effective emergency hypochlorite plants for the sterilization or disinfection of polluted auxiliary supplies in a number of cases. Although this work seriously overtaxed the reduced force of the Division of Sanitation we were able to meet most of the demands for assistance of this kind and there was not a single outbreak of typhoid in the State which could be attributed to a public water supply. The prompt action taken by the Division in safeguarding the quality of public water supplies was in all probability largely instrumental in bringing about this result.

The acute shortage of water supplies of many municipalities and the serious inconveniences and hazards attending such shortage should be a warning for them to provide without delay water supplies of adequate quantity and satisfactory sanitary quality. A dry season such as occurred last summer may be experienced at any time in the future and this, together with the usual increase in consumption should prompt the water boards and water companies to prepare for such emergencies in the future.

During the year seven sets of rules and regulations for the protection of public water supplies were enacted by the Commissioner under the provisions of article 5 of the Public Health Law. These rules were in each case prepared by the Division following detailed inspections of the watersheds to which they related.

Very many complaints regarding public nuisances and stream pollutions were received during the past year, due largely to the unusually low flows, and in many cases to the complete drying up of streams. Although most of these complaints were referred to the local boards of health for suitable action it was necesary for the division to investigate the more important cases.

A special investigation of a public nuisance of long standing and considerable importance created by the discharge of vapors and gases from large industrial plants at Edgewater, N. J., and affecting residents of the Riverside Drive section of New York City was practically completed during the past year. This investigation has covered a number of years and has involved extended scientific studies and observations in order to determine the responsibility of and extent to which each of the plants shared in the nuisances. Many hearings were held by the Commissioner at which the complainants and manufacturers involved were represented. As the result of these investigations and hearings all of the plants involved have either so modified the processes of operation or installed scrubbers or vapor and gas consuming devices as to almost entirely eliminate the objectionable conditions created by the operation of these plants in so far as New York City is concerned.

The investigation of the sanitary condition, equipment and operation of milk pasteurizing plants supplying municipalities outside of New York City is one of the newer and more important functions undertaken by the division and the great improvements in these plants resulting from recommendations of our reports on inspections of the plants have demonstrated the efficiency of this work. Owing, however, to the fact that the position of the inspector who handled this work was abolished on July 1 as the result of the reorganization of the division, it has been necessary to temporarily suspend these investigations until provisions are made by the legislature to provide funds to employ a man competent to carry on this work. Advice has, however, been given by correspondence to local authorities regarding the construction, equipment and operation of milk pasteurizing plants and plans for new plants have been passed upon by the Division. Local ordinances prohibiting the sale of milk other than pasteurized or Grade A have been enacted by a number of municipalities and the constitutionality of one such ordinance has been passed upon and upheld by a justice of the Supreme Court of the State. During the year 190 plants were investigated.

Owing to the depleted force of the division it has been necessary to temporarily suspend the investigation of the sanitary condition of state institutions. This work, will, however, be continued as soon as practicable.

The report on the sanitary condition of over 80 fair grounds visited by some 1,800,000 persons annually was completed during the year. This report comprises a general report setting forth the results of the investigations and making general recommendations for improvements, together with a detailed memoranda of the conditions found to exist at each fair, with recommendations as to the necessary improvements. These reports and memoranda were sent to the fair ground authorities and local boards of health with directions for carrying out the recommendations. From correspondence with the local authorities it appears that steps have been taken in nearly every case to carry out our recommendations as soon as practicable.

In connection with the certification by the Surgeon-General of the United States Public Health Service as to the sanitary quality of the water supplies used by common carriers in interstate traffic under interstate quarantine regulations, we have furnished him with copies of reports on inspections and results of analyses of water supplies at some 80 places. This data furnished by us is used by the Surgeon-General as a basis for certifying to the sanitary quality of water supplies used for drinking or culinary purposes by railroads and steamship lines in interstate traffic.

Although the new law transferred the more strictly engineering work of passing upon plans to the State Engineer, it properly left with the Commissioner of Health the issuance of permits and consequently the control over stream pollution and the safeguarding of sanitary quality of public water supplies. There are, however, certain inconsistencies in the law which should be corrected by the next legislature. There are, moreover, inconsistencies and deficiencies in the Public Health Law which seriously handicap the work of the Division and limit the effectiveness of its work, especially in improving the sanitary quality of public water supplies and controlling stream pollution. In order to correct these conditions it would be necessary to amend the Public Health Law and it is expected that bills will be introduced in the legislature which, if passed, would give the Department more effective control over these important matters.

Respectfully submitted

C. A. HOLMQUIST

December 31, 1921 *Director*

EXAMINATION OF PLANS AND ISSUANCE OF PERMITS

Sections 76, 77 and 78 of the Public Health Law prohibit in general the discharge of sewage, sewage effluent or any decomposable or putrescible wastes into any of the waters of the State unless express permission to do so shall have been first given in writing by the State Commissioner of Health, and provide that he may stipulate under what conditions such discharge may take place. Prior to July 1 of this year the Public Health, Village and Town Laws also provided that plans for sewerage, sewage and waste disposal should be submitted to and receive the approval of the State Commissioner of Health before the installation of such works. These laws, however, were amended by chapter 510 of the Laws of 1921 which became effective on July 1, 1921. The new law provides that plans for sewerage and sewage disposal must be approved by the State Engineer before any permit issued by the State Commissioner of Health for the discharge of sewage or wastes becomes effective.

Although this law resulted in transferring the work of passing upon plans to the State Engineer it left with the Commissioner of Health the matter of issuing permits and consequently the control over stream pollution. During the first half of this year 44 sets of plans for sewerage and sewage disposal were passed upon and permits issued by this Department. Since July 1 37 permits for the discharge of sewage and sewage effluent in connection with plans approved by the State Engineer were issued. Practically all permits issued contained the provisions that the sewerage or sewage disposal works shall be fully constructed in complete conformity with the approved plans; that no storm water or surface water from streets, roofs or other areas shall be admitted to the works; that no sludge or scum shall be discharged into any stream or other body of water or deposited on the ground where they may be washed thereinto by rain or melting snow; and that, whenever required, plans for additional or more complete treatment of the sewage or wastes shall be submitted.

In 1921 plans for sewers, sewer systems and sewage disposal works were approved and permits issued in the places listed below. Only the reports on examination of plans passed upon in connection with two of the more important cases are printed.

AVOCA (School District No. 2, Town of Avoca)

Plans for a sewage disposal plant, consisting of a settling tank and subsurface irrigation system, to serve the public school located in the village of Avoca, in School District No. 2 of the town of Avoca, were approved by the State Engineer on September 19, 1921, and a permit was issued to the board of education of this district by the State Commissioner of Health on September 21, 1921, to discharge effluent from this plant into the ground waters of the State tributary to Salmon creek under the usual conditions.

BROCKPORT (Atlantic and Pacific Products Corporation)

Plans for an industrial waste disposal plant, consisting of a fine mesh revolving screen, a three-unit settling tank, a sludge drying bed and a sand filter to serve the factory of the Atlantic and Pacific Products Corporation, comprising a milk condensery and tomato cannery, located at Brockport, Monroe county, were approved on April 26, 1921, and a permit was issued to this corporation on April 26, 1921, to discharge the effluent from the settling tank, comprising a portion of the disposal plant to treat the industrial wastes from this factory, into the waters of the stream tributary to Salmon creek within the village of Brockport, under the following provision in addition to the usual conditions:

> That whenever required by the State Commissioner of Health, the dosing tank and sand filters shown by the plans approved this day shall be constructed and placed in operation.

BUTLER (T) (Shefford Cheese Company)

Plans for a disposal plant for industrial wastes, consisting of a settling tank and sand filter, to serve the factory of the Shefford Cheese Company, Inc., located at South Butler, Wayne county, were approved by the State Engineer on November 14, 1921, and a permit was issued to the company by the State Commissioner of Health on November 21, 1921, to discharge effluent from the proposed plant of this factory of the company, into the waters of Butler creek, near the factory, within the town of Butler, under the usual conditions.

CANANDAIGUA

The plans for sewer extensions and a sewage treatment plant for the city of Canandaigua, Ontario county, N. Y., were submitted to this Department for approval by the board of public works on March 28, 1921.

Population and environment: The population in 1890 was 5,800; in 1900, 6,200; 1910, 7,200, and in 1920, 7,356. The engineer for the city estimates that its population 30 years from now will be about 10,000. The municipal water supply is taken from Lake Canandaigua.

Present system: The present sewer system, constructed about 30 years ago, embraces nearly all of the city with the exception of a certain portion of Main street and Green street, which are now provided for by the present plans application for the approval of which is included with the application for approval of the disposal plant. At present the sewage of the city is cared for by two trunk sewers, the smaller one, the western outlet sewer, is an 18-inch sewer, while the eastern outlet sewer, which collects the greater portion of the sewage from the city, is 24 inches in diameter.

Dilution available: Canandaigua outlet flows from the lake 25 miles in a northeasterly direction to a point of discharge in the Clyde river, whose waters reach Lake Ontario through the Seneca and Oswego rivers. The hamlets of Chapin, Shortsville, Manchester and Clifton Springs are located on the outlet and within 10 miles of Canandaigua. It was learned from the engineer that it is proposed to control the discharge from the feeder, into which the city sewers discharge, so as to facilitate sewage dilution. The feeder itself leaves the lake near the foot of Main street and enters the main outlet and discharges into Canandaigua outlet about 2 miles below. At ordinary times about the same amount of flow passes through each of these two lake outlets.

Plans submitted: The plans now submitted were submitted in compliance with a notification of this Department to the city council. These plans show that it is proposed to intercept the sewage from these two existing outfall sewers and carry it by gravity to a proposed disposal plant consisting of a screen chamber, pumping station, primary settling tanks of the two-story type, dosing chamber, sprinkling filter, final settling basin and auxiliary sludge drying beds. The plant is to be located midway between the two outlets, about 600 feet from the feeder. Here the sewage will be screened and then will be raised by pumps to pass through the two-story settling tank. The effluent from this tank will, when necessary, be further treated by sprinkling filters which are shown in detail, but permission is sought to discharge the effluent from the tanks directly into the stream, deferring filtration until later.

Sewer extensions: The sewer extensions along the east side of Main street and through Green street embrace about 1 mile of vitrified pipe. All of this is 12-inch with the exception of about 1,600 feet on the southern end of Main street, which is 8-inch. There are many houses situated along these sewer extensions which have hitherto been without sewerage provisions. All sewer extensions are shown provided with manholes at all points of intersection and nowhere farther apart than 400 feet, and are laid on slopes which are considered self-cleansing under ordinary conditions. The other extensions consist of two 18-inch intercepting sewers, one, about 2,500 feet long, to connect the west side sewer with the disposal plant, and the other, 1,100 feet long, to connect the east side sewer with the disposal plant.

Plant site: The site selected for the sewage treatment works appears to be reasonably remote from the developed sections of the city and is reported to be very much cheaper than any other available site on lower ground. The site is approximately centrally located with respect to the two main outlet sewers and appears to be 1,000 feet from the nearest house.

Screen chamber: The screen chamber is 10 feet long by 20 feet in plan and about 15 feet deep, built of concrete reinforced throughout. The screen is to be pitched 45 degrees and is to be composed of bars ½ inch by 2 inches, spaced on 2-inch centers. These bars are provided with lugs extending from the bottom and perforated for tiebolts. The platform for screenings is arranged with perforations so that material raked upon it will readily drain.

Pump house: The pump house is to be 20 feet by 20 feet in plan and about 20 feet deep and is to be built of reinforced concrete. Two half floors are provided, the one near the ground level being for storage of material and office use while the other half floor, protruding from the existing wall halfway between the ground floor and the pump level, supports the motors which are further supported by iron framing resting on the bottom. The pumps connected to the motors are each 1⅜ million gallons capacity centrifugal pumps and are provided with a branch suction pipe to the sump in the pump well, as well as with the main suction pipe. The pump capacity appears adequate to care for the flow of domestic sewage of the city provided ground water and surface water are excluded.

Settling tank: The settling tank is of the 2-story type, constructed in duplicate and provided with side gutters permiting a complete reversal of the direction of the flow. Overall dimensions of the tank in plan are approximately 70 feet long by 40 feet wide. The settling troughs are each 12 feet wide by 18 feet deep, with bottom sloping 1-1/5 on 1. Their combined capacity is about 175,000 gallons. Underneath each of the two settling troughs are 3 hoppers which, with space above them, have a combined capacity for sludge of about 15,000 cubic feet, measuring from one foot below the slot in the bottom of the settling trough. For the present population of 8,000 persons, and the engineer's estimate of maximum flow of about 125 gallons per capita, provision for sedimentation and sludge storage appear satisfactory.

Sludge removal: The sludge is to be discharged onto the sludge drying beds by means of 8-inch cast-iron pipes, terminating in 10-inch cast-iron pipes with 10-inch vitrified branches leading to each sludge bed. The sludge pipes terminate at a point 15 inches above the surface of the bed and have a slope of not less than 2 feet in 100.

Sludge beds: The plans provide for 2 sludge beds, each 50 feet by 100 in size, providing an area of 1¼ square feet per capita, which is liberal. They are composed of very coarse sand underlaid by 11 or more inches of gravel.

Dosing tank: The first of the units of the supplementary works to be constructed when required is the concrete dosing chamber. This chamber receives by gravity the flow from the 2-story settling tank and supplies intermittent doses to the sprinkling filters. This dosing tank has a maximum capacity of about 13,000 gallons and a minimum capacity of about 10,000 gallons. It is provided with a 24-inch automatic discharge siphon leading into a 30-inch main distributing pipe which carries the discharge from the dosing tank to the distribution system of the sprinkling filter.

Sprinkling filter: The sprinkling filter is 279 feet long by 114 feet wide and contains 250-⅞-inch Taylor nozzles, spaced about 11½ feet apart. The minimum depth of filter material is about 6 feet. The filter medium itself is broken stone 1½-inch to 3 inches in size. At the rate of 300,000 gallons per acre foot per day this filter would care for 1,800,000 gallons.

Secondary settling tank: The secondary settling tank has a capacity of 1,000,000 gallons. It is 140 feet long by 40 feet wide by 2 feet deep at the corners and 3 feet deep in the valley at the center. This valley is provided at one end with a 6-inch plugged cast-iron outlet for future pump connection and sludge removal. The overflow from the secondary tank passes over the weir and thence into a manhole where it joins the effluent from the settling tank and is carried to the river by means of a 20-inch vitrified pipe 150 feet in length.

Interceptor elevations: An examination of the plans unaccompanied by a contour map and complete elevations of the existing sewerage system, cannot be entirely conclusive as to certain economic features and it is recommended that further study be given to the possibility of lowering the elevation of the settling tank, even more than is suggested in the report of the consulting engineer and the adjustment of its intercepting sewer connections, so that the flow from the larger or both of the intercepting sewers can be conveyed to the settling tank by gravity and as much as possible of pumping be dispensed with until such time as it may be necessary to install sprinkling filters or further treatment.

A permit was granted to the board of public works of this city on April 6, 1921, to discharge effluent from the primary settling tank, comprising a portion of the proposed sewage disposal works into the waters of the feeder branch of the Canandaigua lake outlet under the following provision in addition to the usual conditions:

> That whenever required by the State Department of Health the dosing tank, sprinkling filter and final settling tank shown by the plans approved this day, shall be constructed and put in operation.

CHERRY VALLEY (Borden's Farm Products Company)

Plans for an industrial waste disposal plant consisting of a large settling tank subdivided into 2 chambers and an outlet sewer to serve the plant of the factory of the Borden's Farm Products Company, Inc., in the village of Cherry Valley, Otsego county, were approved by the State Engineer on July 18, 1921, and a permit was issued to the company by the State Commissioner of Health on July 26, 1921, to discharge the effluent from the proposed disposal plant to treat the waste water and washings from this factory of the company into the waters of Cherry Valley brook in the village of Cherry Valley, under the following provisions in addition to the usual conditions:

> That whenever required by the State Commissioner of Health, the outfall sewer shall be extended to a point below the confluence of Big Pond and Cherry Valley creeks or to such intermediate point as he may determine.
>
> That no whey, sanitary sewage or surface water from roofs or other areas shall be admitted to the proposed disposal plant.
>
> That whenever required by the State Commissioner of Health, detailed plans for the extension of the outfall sewer or for additional works designed to effect a more complete treatment of the waste water and washings shall be submitted to the State Engineer for approval; and that, upon the approval of said plans, such extensions, additions or supplementary works shall be constructed and placed in operation at such time or times thereafter as said Commissioner may designate.

CLYDE

On March 16, 1921, permission was given to the village of Clyde, Wayne county, to temporarily omit certain portions of the sewerage system and sewage disposal works shown on the plans approved by the State Commissioner of Health on April 14, 1920, as amended by plans approved by him on March 16, 1921.

COBLESKILL

Plans for sewer extensions on Elm street, Harder avenue, Washington street, Grove street and from the proposed interceptor extending along Cobleskill creek between Harder avenue and South Grand street in the village of Cobleskill, Schoharie county, were approved by the State Engineer on August 15, 1921, and a permit was issued to the board of sewer commissioners of the village by the State Commissioner of Health on August 18, 1921, to discharge sewage from the proposed sewer extensions into the waters of Cobleskill creek through the present outfall sewer discharging opposite the fair grounds within the village of Cobleskill, under the following provision in addition to the usual conditions:

> That on or before March 1, 1922, satisfactory detailed plans for works for the preliminary treatment of all the domestic sewage of the village of Cobleskill, accompanied by general plans for supplementary works for more complete treatment of the sewage, shall be submitted to the State Engineer for approval; and that, after the approval of said plans, any or all portions of such works for the preliminary treatment of the sewage of the village shall be constructed and put in operation at such time or times as the State Commissioner of Health may designate.

CONEWANGO (Conewango Dairymen's Cooperative Association)

A permit to discharge effluent from an industrial waste disposal plant consisting of a large settling tank and outfall sewer to serve the pasteurizing plant of the Conewango Dairymen's Cooperative Association at Conewango valley, in the town of Conewango, Cattaraugus county, into the waters of Conewango creek, within the town of Conewango was granted to this company on June 18, 1921, under the following provisions, in addition to the usual conditions:

That all of the waste water and washings shall be passed through a settling tank having a capacity of about 1 day's flow of wastes from the plant and so located and constructed that additional works for purification of the wastes may be installed and operated by gravity flow if possible.

That no sewage or other wastes containing human excreta or washings and no whey, skim milk, buttermilk or other wastes containing any considerable amounts of putrescible organic matter shall be discharged into the settling tank.

CONQUEST (T) (Shefford Cheese Company, Inc.)

Plans for an industrial waste disposal plant consisting of a large tank subdivided by baffles with an interior and an outlet sewer to serve the Spring Lake creamery of the Shefford Cheese Company, Inc., situated near the hamlet of Spring Lake, in the town of Conquest, Cayuga county, were approved on June 7, 1921, and a permit was issued to the Shefford Cheese Company, Inc., on that date to discharge the effluent from the proposed disposal plant to care for the waste water and washings from this creamery, into the waters of Duck Lake Outlet creek, within the town of Conquest, under the following provisions, in addition to the usual conditions:

That the traps at the ends of the settling tank be omitted, that the depth of the tank below its outlet be increased to 4 feet and that the tank effluent be conducted to a point of submerged discharge in the creek at least 5 feet from shore.

That no domestic sewage and no whey, skim milk, buttermilk or other wastes containing any considerable amount of organic matter shall be discharged into the disposal plant or into the creek or any other body of water.

COPAKE (T) (Bettman and Sugarman)

Plans for a sewage disposal plant consisting of six large leaching cesspools to serve Camp Barrington on Upper Rhoda lake in the town of Copake, Columbia county, were approved on June 7, 1921, and a permit was issued to Sanford S. Bettman and Arthur M. Sugarman on the same date to discharge effluent from this disposal plant and these cesspools at Camp Barrington, into the ground waters tributary to Upper Rhoda lake and outlet stream within the town of Copake, under the following provision in addition to the usual conditions:

That a tight iron pipe shall be used to make the connection from the old house to the new cesspool provided for that house.

CORNWALL (T) (Property of M. Harrowich)

Plans for a sewage disposal plant consisting of a leaching cesspool, a group of three cesspools and a new main plant embracing a settling tank and subsurface irrigation field to serve the property of Dr. Max Harrowich, located on Bay View avenue in the town of Cornwall, Orange county, were approved on May 16, 1921, and a permit was issued to Dr. Harrowich on the same date to discharge the effluent from this plant serving this property into the ground waters tributary to the Hudson river, within the town of Cornwall under the usual conditions.

DANSVILLE

Plans for sewer extensions to serve a district in the northern section of the village of Dansville, located os Morey avenue. Clinton and Elizabeth streets, Livingston boulevard and the Circle, in the village of Dansville, Livingston county, were approved by the State Engineer on November 3, 1921, and a permit was issued by the State Commissioner of Health to the sewer commissioners of the village of Dansville, and upon the receipt of an application on December 13, 1921, a permit was granted to the board of sewer commissioners on that date to discharge sewage from these proposed sewer extensions after treatment in the village sewage disposal plant, into the waters of Canaseraga creek through the existing outlet at a point about 635 feet west of the disposal works, within the town of North Dansville under the following provision in addition to the usual conditions:

> That on or before February 1, 1922, satisfactory detailed plans for modifications in the existing sewage disposal plant shall be submitted to the State Engineer for approval; and that within four months after the approval of such plans said modifications shall be carried out.

EASTHAMPTON (T) (Fisheries Products Co.)

Amended plans for a sewage disposal plant consisting of extensive treatment tanks, cinder screens and separating apparatus, to serve the fish factory of the Fisheries Products Company, near the hamlet of Promised Land in the town of East Hampton, Suffolk county, were approved on April 13, 1921. Since the discharge of no additional wastes beyond that contemplated by the permit issued on May 22, 1920, was planned, the issuance of a further permit in connection with this approval of these plans was not necessary.

EAST ROCHESTER

Amended plans for sewer extensions consisting of sewers on Drumore Crescent, Seven House lane, Upper Crescent, Winding Way and Woodneath Crescent streets and where shown on adjacent streets, to serve a subdivision in the vicinity of West McKinley street in the village of East Rochester, Monroe county, were approved on June 11, 1921, and a permit was issued to the board of trustees of this village to discharge sewage from these proposed extensions into the waters of Irondequoit creek after the sewage shall first have been passed through the village disposal plant, within the village of East Rochester under the usual conditions.

EAST SYRACUSE (Syracuse Rubber Company, Inc.)

A permit to discharge effluent from a sewage disposal plant comprising a settling tank and outlet sewer to treat the domestic or sanitary sewage from the factory of the Syracuse Rubber Company, Inc., located on Thompson road, in the village of East Syracuse, Onondaga county into the waters of Headson creek within the village of East Syracuse was granted on February 15, 1921, under the following provision in addition to the usual conditions:

> That no surface or storm water from roofs or other areas and no industrial wastes shall be discharged into or passed through the settling tank.

FLORIDA (T) (Adirondack Power and Light Corporation)

Plans for a sewage disposal plant consisting of a large tank with submerged outlet and outfall sewer to treat the domestic and sanitary sewage from the electric power plant of the Adirondack Power and Light Corporation in the town of Florida, Montgomery county, located at Lock No. 10, of the State Barge canal near the city of Amsterdam, were approved by the State Engineer on November 10, 1921, and a permit was issued to the corporation on November 21, 1921, by the State Commissioner of Health to discharge effluent from this disposal plant into the waters of the Mohawk river near Lock No. 10, within the town of Florida, under the usual conditions.

GARDEN CITY (Garden City Company)

Plans for an extension to a sewage pumping station comprising the addition of a new 300 gallon per minute motor driven pump and housing therefor to serve the Cedar Valley Pumping station of the Garden City Company located in the town of Hempstead near the village boundary of Garden City, were approved on February 18, 1921, on condition that a separately located emergency power line be installed to operate the electric motors of the pumping station or that power for the pumps be provided from an independent source. As the plans did not provide for the collection and discharge of additional sewage a permit was not issued in connection with these plans.

Amended plans for a sewage disposal plant consisting of enlargement to the screen chamber and settling tank and provisions for a large digestion tank, together with enlargement to the dosing chamber and sand filters; to serve the village of Garden City, Nassau county, were approved by the State Engineer on November 30, 1921, and a permit was issued on December 7, 1921, by the State Commissioner of Health, to discharge effluent from the sewage disposal plant as modified and extended into the ground waters tributary to Broad channel within the village of Garden City under the following provision in addition to the usual conditions:

> That the surface of the settling tanks shall be kept as free as practicable from scum and that the sludge shall never be allowed to accumulate to a depth of more than 8 feet in any part of the settling tank, or for such a period as to allow active fermentation to take place in the settling tank.

GLEN COVE

Plans for a sewer outlet and pumping station to serve the city of Glen Cove, Nassau county, were approved by the State Engineer on October 14, 1921, and a permit was issued to the city council on November 2, 1921, by the State Commissioner of Health to discharge effluent from the sewage disposal plant of the city, as modified and extended by the construction of this sewer outfall and pumping station, into the waters of Hempstead Harbor, opposite the foot of Garvies Point road, within the city of Glen Cove, under the following provisions in addition to the usual conditions:

> That before the proposed pumping station and outfall are put into operation, plans for a suitable sludge drying bed, or for some other satisfactory method of disposal of the sludge shall be submitted to and receive the approval of the State Engineer.
>
> That if the flow from the city sewers tributary to this disposal plant cannot be so reduced, or if this flow at any time becomes such, that the average detention period in the upper or sedimentation compartment of the settling tank is less than 2 hours or the minimum detention period less than 1 hour, one or more additional tanks shall be constructed so as to obtain at least these detention periods.
>
> That during the bathing season and the period when shell fish are taken from Hempstead Harbor and whenever required by the State Commissioner of Health, chlorine shall be uniformly applied to the effluent from the sewage disposal plant at the rate of not less than 10 parts per million by weight.

Plans for the proposed sewer extensions and sewage pumping stations to serve the city of Glen Cove, Nassau county, were approved by the State Engineer on November 3, 1921, and a permit was issued to the City Council on November 14, 1921 by the State Commissioner of Health to discharge sewage from the sewer extensions and sewage pumping stations shown on the approved plans, through the city sewage disposal plant on Glen Cove creek into the waters of Hempstead Harbor, opposite the foot of Garvies Point road within the city of Glen Cove, under the following provisions in addition to the usual conditions:

> That, on or before May 1, 1923, satisfactory plans showing in detail the existing pumping stations on Stanco street, Crescent Beach road, and Sea Cliff avenue, such modifications as may be necessary to provide greater capacity and duplicate pumping equipment for the Sea Cliff avenue station, and some satisfactory means of pumping the sewage from all the stations in case of failure of power or pumping machinery, shall be submitted to the State Engineer for approval.
>
> That, within three months after the approval of such plans, the modifications be made and satisfactory means of pumping the sewage from the stations in case of failure of the machinery or electrical power shall be provided.
>
> That, on or before December 30, 1922, accurate plans showing all the existing sewers in the city of Glen Cove shall be filed with the State Engineer and the State Commissioner of Health.

GREENBURG (T) (Community of St. Mary)

Plans for a sewage disposal plant consisting of a covered settling tank, contact bed and subsurface irrigation system to serve the proposed House of Mercy near Valhalla, in the town of Greenburg, Westchester county, were approved on February 28, 1921, and a permit was issued on the same day to the president of the Community of St. Mary of Peekskill, to discharge effluent from the proposed disposal works of the proposed House of Mercy into the waters tributary to the Bronx river within the town of Greenburg, under the usual conditions.

GREENPORT (T) (Holbrook Company)

Plans for a sewage disposal plant, consisting of a settling tank, pumping station and intermittent sand filters, to serve the automobile body factory of the Holbrook Company, located near the city of Hudson, town of Greenburg, Columbia county, were approved on March 16, 1921, and a permit was issued to the Holbrook Company on that date to discharge the effluent from the proposed treatment plant for this factory into the waters of Claverack creek, in the town of Greenburg under the following provision in addition to the usual conditions:

> That in the settling tank the inlet baffle shall terminate 3 feet above the bottom, and that two outlet pipes near the end of the partition be substituted for the single outlet shown at the center of the partition.

HAVERSTRAW (T) (Letchworth Village)

Plans for a sewage disposal plant, amended in accordance with the recommendations of this Department and embracing extensions to the sand filters and the addition of a chlorination building and apparatus to serve Letchworth Village, a state custodial asylum for mental defectives, located near the hamlet of Thiells, in the town of Haverstraw in Rockland county, were approved on January 6, 1921.

HEMPSTEAD (T) (School District No. 11)

Plans for a sewage disposal plant consisting of three separate units, each comprising a settling tank, and four leaching cesspools to serve the school on Terrell avenue, Oceanside, in School District No. 11 of the town of Hempstead, Nassau county, were approved by the State Engineer on October 27, 1921 and a permit was issued to the board of education of this school district by the State Commissioner of Health on November 2, 1921, to discharge effluent from this disposal plant into the ground waters tributary to East Rockaway creek, within the town of Hempstead, under the following provision in addition to the usual conditions:

> That whenever the sludge or scum shall accumulate so as to occupy more than ¼ of the depth of the settling tanks the sludge and scum shall be removed from the proposed tanks and disposed of by burying at such a place and in such a manner as not to create a nuisance.

HUNTINGTON (T) (Sewer District)

Plans for sewer extensions to be built in Long Swamp road, formerly Lenox avenue, in the town of Huntington, Suffolk county, were approved by the State Engineer on September 29, 1921, and a permit was issued to the sewer commissioners of the sewer district of the town of Huntington, by the State Commissioner of Health, on October 3, 1921, to discharge sewage from the proposed sewer extensions through the district disposal works into the waters of Huntington harbor, through the existing effluent outlet near the intersection of New York avenue and Mill Dam road, within the town of Huntington, under the usual conditions.

KINGSTON (Kingston Fertilizer Co.)

Plans for an industrial waste disposal plant, consisting of a settling tank and filter bed, to serve the rendering plant of Mr. Lewis E. Fischang, known as the plant of the Kingston Fertilizer Company, located on Chapel street, city of Kingston, Ulster county, were approved on May 7, 1921, and a permit was issued to Lewis E. Fischang on the same date to discharge the effluent from the proposed treatment plant into the waters of a tributary to Rondout creek, within the city of Kingston, under the following provision, in addition to the usual conditions:

> That the top 9-inch layer of gravel be omitted from the filter and that the underdrain be placed on the bottom of the filter bed, and have its upper end carried up to a guarded flushing vent 9 inches or more above the top of the bed.

LARCHMONT

Plans for sewer extensions on Addison street and Larchmont avenue, in Sewer District No. 1 of the village of Larchmont, Westchester county, were approved by the State Engineer on November 22, 1921, and a permit was issued by the State Commissioner of Health to the board of trustees of the village on December 7, 1921, to discharge sewage from the proposed sewer extensions, into the waters of Larchmont harbor and Long Island Sound through the existing Bonnet avenue outlet sewer opposite Cedar island, within the village of Larchmont, under the following provisions, in addition to the usual conditions:

> That after January 1, 1923, sewage from the proposed sewers shall not be discharged into Larchmont harbor on Long Island Sound without treatment, but shall be conveyed to and treated in the sewage disposal works to be constructed to treat the sewage from Sewer District No. 1 in the village of Larchmont, in accordance with notice to the board of trustees of the village of Larchmont, dated December 7, 1921.
>
> That, whenever required by the State Commissioner of Health, the sewage disposal plants for the treatment of the sewage from the other sewer districts of the village shall be constructed in accordance with the plans approved by this Department on March 2, 1917, and in accord-

ance with the provisions of a permit issued on the same date in connection with the approval of the plans or in accordance with plans subsequently approved and permits subsequently issued.

On December 7, 1921, the following notice was served on the board of trustees of the village:

To the Board of Trustees of the Village of Larchmont:

Pursuant to the provisions of the Public Health Law and in accordance with the conditions of the permits for the discharge of sewage from sewers in Chatsworth and Larchmont avenues and other streets into the waters of Larchmont harbor on Long Island sound at Larchmont, granted on June 13, 1911, and subsequent thereto, the village of Larchmont is hereby notified to construct all portions of the sewage disposal works at Bonnet avenue and the intercepting and outlet sewers connected therewith, shown by the plans approved on March 2, 1917, and April 8, 1918, or approved amendments thereto, and to have said works and sewers completed and put in operation by January 1, 1923.

This notice is given in accordance with and under the provisions of section 77 of chapter 45 of the Consolidated Laws (the Public Health Law), on the 7th day of December, 1921.

M. NICOLL, JR.
Deputy State Commissioner of Health

LIVONIA (T) (Brown and Bailey Condensed Milk Company)

A permit to discharge waste water and washings from an outfall sewer to serve the milk plant of the Brown and Bailey Condensed Milk Company, located at Lakeville, in the town of Livonia, Livingston county, into the waters of Conesus creek at or below the highway bridge on the Geneseo and Canandaigua highway, within the town of Livonia, was granted to this company on March 16, 1921, under the following conditions:

> That no untreated domestic sewage from closets or toilet rooms and no skimmed milk, whey, buttermilk or other wastes containing any considerable amount of organic matter shall be discharged into Conesus creek or any other body of water through the proposed outlet sewer.
>
> That whenever required by the State Commissioner of Health, satisfactory detailed plans for the treatment of the waste water and washings from the condensery of this company at Lakeville shall be submitted for approval; and upon the approval of such plans any or all portions of such treatment works shall be constructed and put in operation at such time or times thereafter as said Commissioner may designate.

On the same date a permit to discharge effluent from a sewage disposal plant consisting of a large settling tank for domestic sewage from the factory toilets, to serve this milk plant, into the waters of Conesus creek at the same point, was granted to this company under the following conditions:

> That the settling tank shall have a capacity equal to one day's flow of sewage from the condensery and that it shall be so located and constructed that additional works for more complete treatment of the sewage may be installed and operated by gravity flow if possible.
>
> That the effluent pipe from the settling tank shall be discharged into Conesus creek at a point at or below the highway bridge on the Geneseo to Canandaigua highway and that the outlet of the effluent pipe shall be extended out to a point near the middle of Conesus creek, where it will be submerged at all stages of flow in the creek.
>
> That no industrial wastes and no storm water, unpolluted condenser water and no skimmed milk, buttermilk or whey containing any considerable amount of organic matter shall be discharged into the settling tank.

LYME (T) (E. W. Coon Cheese Factory)

Plans for an industrial waste disposal plant consisting of a large settling tank, automatic dosing tank and three intermittent sand filters and an outfall laid in a rock crevice to serve the cheese factory of E. W. Coon in the town of Lyme, near the village of Chaumont, Jefferson county, were approved on April 25, 1921, and a permit was issued on the same date to E. W. Coon to discharge the effluent from the proposed disposal plant to treat the waste water and washings from this factory into the ground waters tributary to Saw Mill bay, within the town of Lyme, under the following provisions in addition to the usual conditions:

> That an 8-inch siphon discharging into 10-inch pipes leading to the filter beds be provided in place of the 6-inch siphon and 6-inch pipes shown and that the siphon be placed in a sump 5 inches deep.
>
> That the upper 2 feet of all filters shall be composed of clean sand of an effective size of between .2 m. m. and .45 m. m.; that the lower foot of the filtering material shall be of graded gravel; and that the underdrains shall be placed not more than 12 feet apart.
>
> That no sewage or other wastes containing human excreta or washings and no whey, skim milk, buttermilk or other wastes containing any considerable amounts of putrescible organic matter shall be discharged into the disposal plant.
>
> That whenever required by the State Commissioner of Health, the filter effluent shall be conducted to a submerged diffusion outlet in the bed of Horse creek channel or to deep water in Saw Mill bay.

LYNBROOK (School District No. 20, Town of Hempstead)

Plans for a disposal plant, consisting of two sewage disposal systems, each consisting of a septic tank overflowing into three leaching cesspools, to serve the Lynbrook High School of School District No. 20 of the town of Hempstead, located in the village of Lynbrook, Nassau county, were approved on June 7, 1921, and a permit was issued on the same date to the board of education of this district to discharge effluent from this proposed sewage treatment plant into the waters of East Rockaway creek, within the town of Hempstead, under the usual conditions.

MADRID (Madrid Creamery)

Plans for an industrial waste disposal, consisting of a settling tank, subsurface absorption field and leaching cesspools, to serve the Madrid Creamery, located on North street, in the village of Madrid, St. Lawrence county, were approved on April 1, 1921, and a permit was issued on the same date to Mr. W. J. Agen to discharge the effluent from the proposed disposal plant, to treat the waste water and washings from this creamery into the ground waters tributary to the Grass river, within the town of Madrid, under the following provision, in addition to the usual conditions:

> That no domestic sewage or other wastes containing human excreta, and no whey, skim milk, buttermilk or other wastes, containing any considerable amounts of putrescible organic matter, shall be discharged into the proposed disposal plant.

MAMARONECK

Preliminary plans for a sewage disposal plant, contemplating the construction of a sewage disposal works, consisting of a pumping station, fine screen and an activated sludge plant, to be located on the southwest corner of Harbor island, to serve the village of Mamaroneck, Westchester county, were approved by the State Engineer on October 25, 1921. A permit was issued by the State Commissioner of Health to the board of trustees of the village of Mamaroneck on October 28, 1921, to discharge effluent from the proposed sewage disposal works shown by these plans, into the waters of Mamaroneck harbor, within the village of Mamaroneck, under the following provision, in addition to the usual conditions:

> That satisfactory detailed plans for the disposal works, the connecting trunk sewers and all appurtenances connected therewith, shall be submitted to and receive the approval of the State Engineer before the construction of the proposed disposal works, connecting trunk sewers and appurtenances is commenced.

MAMARONECK (T) (Sewer District No. 1)

Original plans for a sewer system for District No. 1 of the town of Mamaroneck, Westchester county, were approved on July 15, 1920. These plans provided for a separate sewer system covering 356 acres, having a present population of 600 and an estimated future population of 7,000, and for the treatment of the sewage from this system in works to be constructed and operated jointly with the village of Larchmont. This arrangement did not prove feasible, and on March 17, 1921, plans for modifications of the sewer system and for an independent disposal plant for the sewer district were approved. On June 11, 1921, amended plans were approved, which provided for a change of location of the disposal plant to be built in connection with the sewerage system, and on July 13, 1921, amended plans, providing for so adjusting the sewerage system as to permit to connecting it with the disposal plant at the new location, were approved by the State Engineer. In addition to the usual conditions, the permit issued on March 21, 1921, for the sewer system provided as follows:

> That before the pumping station and force main for subdistrict B, or I-A. M. L. are constructed, detailed plans for said pumping station and force main shall be submitted to and receive the approval of this Department.
>
> That before any of the sewers not shown in detail by the approval plans are constructed, satisfactory detailed plans of said sewers shall be submitted to and receive the approval of this Department.

MARCY (T) (Utica State Hospital, Marcy Division)

Amended plans for a change in the outlet pipe below the chlorination building to the sewage disposal plant serving the Marcy Division of the Utica State Hospital, in the town of Marcy, Oneida county, were approved on January 3, 1921, together with a profile showing the proposed change.

MASSENA

Plans for sewer extensions consisting of sewers on South Main street and Cook street in the village of Massena, St. Lawrence county, were approved on May 26, 1921, and a permit was issued on that date to the board of trustees of the village to discharge the sewage from the proposed extensions into the waters of the Raquette river at South Main street within the village of Massena under the following provision in addition to the usual conditions:

> That whenever required by the State Commissioner of Health, satisfactory detailed plans for works for the partial or preliminary treatment of the entire sewage of the village of Massena, shall be submitted for approval; and upon the approval of said plans any or all portions of such works for treatment of sewage shall be constructed and put in operation at such time or times thereafter as said Commissioner may designate.

MIDDLETOWN (T) (Dairymen's League Co-Operative Association, Inc.)

A permit to discharge effluent from a waste disposal plant consisting of a settling tank and an outfall sewer, to care for the waste water and washings from the Arkville condensery of the Dairymen's League Co-operative Association, Inc., located at the Hamlet of Arkville in the town of Middletown, Delaware county, into the waters of the east branch of the Delaware river within the town of Middletown was granted to the Association, on January 26, 1921, under the following provision in addition to the usual conditions:

> That all the waste water and washings shall be passed through a settling tank having a capacity of not less than the daily flow of waste from the condensery and so located and constructed that additional works for purification may be installed and operated by gravity flow, if possible.

MONTICELLO

Plans for a proposed sand filter to be constructed in connection with the existing sewage disposal plant of the village of Monticello, Sullivan county, were approved by the State Engineer on August 6, 1921, and a permit was issued on August 10, 1921, by the State Commissioner of Health to the board of sewer commissioners of the village to discharge effluent from the proposed sand filter into the waters of Cold Spring brook through the outlet of the existing sewage disposal plant within the village of Monticello, under the usual conditions.

MOUNT PLEASANT (T) (Westchester County Almshouse)

Plans for extensions to the sewage disposal plant consisting of settling tanks and sand filters, to serve the Westchester county almshouse at the hamlet of East View in the town of Mount Pleasant, Westchester county, were approved on April 6, 1921, and a permit was issued to the board of supervisors of the county of Westchester on the same date, to discharge effluent from this disposal plant into the waters of the Sawmill river within the town of Mount Pleasant under the usual conditions.

NEW CASTLE (T) (Children's Aid Society of the City of New York)

Amended plans for a sewage disposal plant embracing the addition of a sludge drying bed to serve the Convalescent Home of the Children's Aid Society of New York City, located near Chappaqua, town of New Castle, Westchester county, were approved by the State Engineer on September 29, 1921, and a permit was issued by the State Commissioner of Health to the Society on October 3, 1921, to discharge effluent from the proposed sludge drying bed into the waters of a tributary to Sawmill river through the effluent trench outlet of their existing sewage disposal plant within the town of New Castle under the usual conditions.

NEW HARTFORD (T) (Utica Country Day School)

Plans for a sewage disposal plant consisting of a large two-compartment settling tank and outfall sewer to serve the Utica Country Day School, Inc., located in the town of New Hartford, Oneida county, were approved by the State Engineer on August 9, 1921, and a permit was issued by the State Commissioner of Health on August 12, 1921, to this school to discharge effluent from the proposed sewage disposal plant into the waters of a tributary of Saquoit creek at the point of discharge shown on the plans within the town of New Hartford under the usual conditions.

NEW LEBANON (T) (School District No. 1)

Plans for a sewage disposal plant consisting of a settling tank and two fields of subsurface irrigation tile to serve the Union Free School in District No. 1 of the town of New Lebanon, Columbia county, located about 7 miles west of Pittsfield on the highway between Pittsfield and Albany, were approved on March 5, 1921, and a permit was issued on the same date to the board of education of this district to discharge effluent from this disposal plant into the ground waters tributary to Wyomanock creek within the town of New Lebanon under the following provisions, in addition to the usual conditions:

> That the submerged down-turned pipe on the inlet of the settling tank shall be omitted; that a transverse baffle, extending 2 feet below the flow line, shall be placed across the end of the tank, 1 foot from the inlet; and that a suitable vent with its top carried above the high water level shall be provided for the tank.
>
> That the manhole of the settling tank shall be carried up level with the surface of the ground and that this manhole shall be provided with a tight locked manhole cover.
>
> That watertight covers be provided for all openings into sewer and disposal systems which are lower than the highest ground or surface water level, and that these covers be maintained over these openings except while the openings are being properly used for examination and cleaning.
>
> That the subsurface tile drains shall be so laid that their inverts shall be in all cases at depths between 1 foot and 2 feet below the ground surface.

NEW YORK CITY (The New York Association for Improving the Condition of the Poor)

Plans for a sewer system and for a sewage disposal plant, comprising a subdivided settling tank and a chlorination apparatus for disinfecting the tank effluent, to serve the Summer Home of the New York Association for Improving the Condition of the Poor, located near the postoffice of Eltingville on Staten Island, in the borough of Richmond, New York city, were approved on May 6, 1921, and a permit issued to the Association on that date permitting the discharge of effluent of this plant into the waters of Lower New York bay at the point shown by the plans in the borough of Richmond, under the following provision in addition to the usual conditions:

> That chlorine gas shall be applied uniformly to the effluent from the settling tanks in the proportion of not less than 15 parts of the gas to 1,000,000 parts of effluent before it is discharged into Lower New York bay, and that this proportion shall be increased when required by the State Commissioner of Health.

NORTH ELBA (T) (Benson and Emerson Camps)

Plans of a sewage disposal plant, consisting of settling tanks and intermittent sand filters and effluent ditches to serve four houses and outbuildings on the Benson and Emerson estates on Buck island in Lake Placid, in the town of North Elba, Essex county, were approved on March 31, 1921, and a permit was issued to William S. Benson on the same date to discharge the effluent from the ditches of the proposed disposal plant to serve his camp and three other adjoining camps on Buck island into the ground waters tributary to Lake Placid within the town of North Elba, under the usual conditions.

ONEONTA (T) (School District No. 6)

Plans for a sewage disposal plant, consisting of a large cesspool overflowing into a series of leaching cesspools to serve the public school in District No. 6 of the town of Oneonta, Otsego county, located on the State Highway about one-half mile west of the Oneonta city line, were approved on April 13, 1921, and a permit was issued to the board of education on the same date to discharge effluent from these cesspools into the waters tributary to Otego creek or the Susquehanna river within the town of Oneonta, under the following provision, in addition to the usual conditions:

> That the cesspools shall be constructed with dry walls of masonry or hollow tile, open bottoms and depths not less than 5 feet below the flow line, and that a third cesspool at least 6 feet in diameter shall be built at once in addition to the two cesspools shown.

ONONDAGA (T) (School District No. 5)

Plans for a sewage disposal plant, consisting of a settling tank, dosing chamber and subsurface irrigation system, to serve the Taunton Junior High School, near Split Rock, in the town of Onondaga, in School District No. 5, in the towns of Onondaga, Geddes and Camillus, were approved by the State Engineer on December 16, 1921, and a permit was issued by the State Commissioner of Health to the board of education of this district on December 20, 1921, to discharge effluent from this plant into the ground waters tributary to Harbor brook on the property of said school, within the town of Onondaga, under the usual conditions.

OWASCO (T) (Owasco Country Club)

Plans for a sewage disposal plant, consisting of a large settling tank provided with a dosing chamber discharging into a subsurface system, to care for the camp and club house of the Owasco Country Club, located near the east side of Owasco lake in the town of Owasco, Cayuga county, were approved on April 22, 1921, and a permit was issued on the same date to the board of governors of the club to discharge effluent from the proposed disposal plant into the ground waters tributary to Owasco lake within the town of Owasco, under the usual conditions.

PAINTED POST

General plans for a sewer system, showing the location of the disposal plant, to consist of settling tanks and pumping plant to serve the village of Painted Post, Steuben county, were approved by the State Engineer on August 25, 1921, and a permit was issued to the board of trustees of the village by the State Commissioner of Health on the same date to discharge the effluent from the proposed sewage disposal plant into the waters of the Chemung river within this village, under the following provision, in addition to the usual conditions:

> That, prior to the commencement of the construction work on any sewers or sewerage structures shown by the present plans, satisfactory detailed plans for the Imhoff tanks and pumping plant, accompanied by general plans for additional or supplementary works for more complete treatment of the sewage, shall be submitted to, and receive the approval of, the State Engineer.

Plans for a sewage disposal plant, consisting of a coarse screen and settling tank, sludge drying bed and a pumping plant with additional units planned for later construction to serve the village of Painted Post, were approved by the State Engineer on December 1, 1921, and a permit was issued by the State Commissioner of Health on December 13, 1921, to the board of trustees of the village to discharge effluent from the proposed disposal plant shown in detail on these approved plans, into the waters of the Chemung river in this village, under the following provisions in addition to the usual conditions:

> That the proposed sewage disposal plant shown by the plans approved by the State Engineer on December 1, 1921, shall be fully constructed in complete conformity with such plans, except that one of the two settling tanks and one of the two sludge beds may be temporarily omitted from construction.
>
> That, whenever the average daily flow of sewage tributary to the proposed sewage disposal plant shall exceed 220,000 gallons, the settling tank and sludge bed shown by dotted lines on drawing No. 14 of the plans approved by the State Engineer on December 1, 1921, shall be constructed and put into operation.

PHILLIPSTOWN (T) (Surprise Lake Camp)

Plans for a sewage disposal plant, consisting of settling tanks, intermittent sand filters and effluent trenches, to serve the Surprise Lake Camp of the Educational Alliance and Young Men's Hebrew Association, town of Phillipstown, Putnam county, were approved by the State Engineer on October 8, 1921, and a permit was issued by the State Commissioner of Health on October 11, 1921, to the association to discharge effluent from this proposed plant into the waters of Breakneck brook on the property of the Association, within the town of Phillipstown, under the usual conditions.

PLATTSBURG (United States Military Reservation)

Plans for a 6-inch sewer to serve the latrine and bath house on the Reservation in the city of Plattsburg, Clinton county, were approved by the State Engineer on August 12, 1921, and a permit was issued by the State Commissioner of Health on August 18, 1921, to the commanding officer of the Reservation to discharge the sewage from the proposed sewer into the waters of Lake Champlain, opposite the property of the Reservation, within the city of Plattsburg, under the following provisions in addition to the usual conditions:

> That, whenever required by the State Commissioner of Health, satisfactory detailed plans for works for either the extension or relocation of said sewer, or both, shall be submitted to the State Engineer and Surveyor for approval; and that, upon the approval of said detailed plans, any or all portions of such works shall be constructed and put in operation at such time or times thereafter as the State Commissioner of Health may designate.
>
> That, whenever required by the State Commissioner of Health, satisfactory plans for a system of intercepting sewers and sewage disposal works for the collection and treatment of the entire sewage of the Reservation shall be submitted to the State Engineer and Surveyor for approval.

PLEASANTVILLE (School District No. 9)

Plans for a sewage disposal plant, consisting of a settling tank and three large leaching cesspools, to serve the Union Free School District No. 9 of the town of Mount Pleasant, located at Pleasantville, Westchester county, were approved by the State Engineer on December 7, 1921, and a permit was issued by the State Commissioner of Health to the board of education of this district on December 10, 1921, to discharge effluent from this sewage disposal plant into the ground waters of the State tributary to the Saw Mill river within the village of Pleasantville under the following provision, in addition to the usual conditions:

> That, whenever the seating capacity of the school is increased to 160, satisfactory detailed plans showing such modifications and enlargements of the plant as may be necessary shall be submitted to the State Engineer for approval; and, upon approval of said plans, any or all portions of such modifications and enlargements shall be constructed and put in operation at such time or times thereafter as the State Commissioner of Health may designate.

RENSSELAER

Plans for a sewer extension on Willow street in the city of Rensselaer, Rensselaer county, were approved on April 19, 1921, and a permit was issued to the common council of the city on the same date to discharge sewage from this proposed extension into the waters of the Hudson river through the existing outlet at the lower end of Herrick street, within the city of Rensselaer, under the condition that the sewer extension shown by plans approved this day shall be fully constructed in complete conformity with such plans or approved amendments thereof.

Plans for sewer extensions on Second street in the city of Rensselaer, Rensselaer county, were approved by the State Engineer on August 24, 1921, and a permit was issued by the State Commissioner of Health on August 30, 1921, to the common council of the city to discharge sewage from the proposed sewer extensions on Second street between Church street and Fowler avenue into the waters of the Hudson river, through the existing outlet at the lower end of Fowler avenue, within the city of Rensselaer, under the following provisions in addition to the usual conditions:

> That, whenever required by the State Commissioner of Health, satisfactory detailed plans for intercepting and outfall sewers to convey all the domestic sewage of the city to a suitable site for sewage disposal works, together with detailed plans for the preliminary treatment of all the domestic sewage of the city, and showing a suitable location and general plans for supplementary works for more complete treatment of domestic sewage, shall be submitted to the State Engineer and Surveyor for approval.
>
> That, upon approval of said plans, the intercepting and outfall sewers and works for the preliminary treatment of sewage, any or all portions of such sewers and works shall be constructed and put into operation at such time or times thereafter as said Commissioner may designate.

RIPLEY (T) (Telling Belle-Vernon, New York Co., Inc.)

A permit to discharge waste water and washings from an outlet sewer extending to Lake Erie, to serve the condensery of the Telling Belle–Vernon New York Company, Inc., located at Ripley, Chautauqua county, into the waters of Lake Erie, was granted to this company on April 5, 1921, under the following provisions in addition to the usual conditions:

> That no sewage or other wastes containing human excreta or washings, and no whey, skim milk, buttermilk or other wastes containing any considerable amounts of putrescible organic matter, shall be discharged into the lake with the waste water and washings.
>
> That, whenever required by the State Commissioner of Health, satisfactory detailed plans for treatment works, to treat the waste water and

> washings from the condensery before their discharge into Lake Erie, shall be submitted to this Department for approval; and that upon the approval of said plans such works for the treatment of the waste water and washings shall be constructed and put in operation at such time or times thereafter as said Commissioner may designate.

ROCHESTER (T) (Dairymen's League Cooperative Assn., Inc.)

A permit to discharge the effluent from a settling tank to serve the creamery of the Dairymen's League Cooperative Association, Inc., located in the town of Rochester, Ulster county, into the waters of Rondout creek was granted to this company on February 14, 1921, under the following provisions, in addition to the usual conditions:

> That all waste water and washings from this creamery shall be passed through a settling tank having a capacity of not less than the daily flow of wastes from the creamery, and so located and constructed that additional works for treatment of the wastes may be installed and operated by gravity flow, if possible.
>
> That, whenever required by the State Commissioner of Health, all whey or other wastes containing any considerable amounts of putrescible organic matter shall be excluded from the settling tank and disposed of in some other satisfactory manner.

ROCKVILLE CENTER (School District No. 21 of the Town of Hempstead)

Plans for a sewage disposal plant consisting of a settling tank and subsurface irrigation system to serve the Riverside public school of School District No. 21 of the town of Hempstead, located at Rockville Center, Nassau county, were approved by the State Engineer on December 19, 1921, and a permit was issued to the Board of Education on December 20, 1921, to discharge effluent from this sewage disposal plant into the ground waters on the school property within the village of Rockville Center under the following provision in addition to the usual conditions:

> That when sludge and scum accumulates so as to occupy one-fourth of the depth of the settling tanks, and not less than once a year, the sludge and scum shall be so removed and so disposed of by burying in some remote place as not to create a nuisance.

ROME (T) (State School for Mental Defectives)

Plans for the rehabilitation of a sewage disposal plant consisting of settling tanks, sludge drying beds, sprinkling filters and subsidence basins, to serve the State School for Mental Defectives, located in the town of Rome, in Oneida county, near the city of Rome, including modifications made in accordance with recommendations of this Department, were approved by the State Commissioner of Health on June 23, 1921.

SALAMANCA

Plans for sewer extensions on Broad and on Center streets and on Trout avenue in the city of Salamanca, Cattaraugus county, were approved by the State Engineer on November 19, 1921, and a permit was issued by the State Commissioner of Health on November 23, 1921, to the common council of the city to discharge sewage from the proposed sewer extensions into the waters of the Allegany river near the foot of Center street under the following provision in addition to the usual conditions:

That whenever required by the State Commissioner of Health, satisfactory detailed plans for intercepting outfall sewers to convey the entire sanitary sewage of the city to a suitable site for sewage disposal works, together with detailed plans for preliminary treatment works to treat the entire sanitary sewage of the city shall be submitted to the State Engineer for approval; and upon the approval of said plans any or all portions of such intercepting and outfall sewers and for such preliminary treatment works shall be constructed and put in operation at such time or times thereafter as said Commissioner may designate.

SALISBURY (T) (Herkimer County Tuberculosis Hospital)

Amended plans for a proposed new sewage disposal plant consisting of subdivided settling tank, dosing chamber, subsurface irrigation fields, sludge drying bed and drainage trench to serve the Herkimer County Tuberculosis Hospital, located in the town of Salisbury, Herkimer county, were approved by the State Engineer on August 31, 1921, and a permit was issued by the State Commissioner of Health on September 2, 1921, to the board of managers of this hospital to discharge effluent from this proposed sewage disposal plant into the ground waters tributary to Canada creek within the town of Salisbury, under the usual conditions.

SAVANNAH (The Shefford Cheese Company)

Plans for an industrial waste disposal plant consisting of settling tanks and a sand filter bed to serve the cheese factory of the Shefford Cheese Company, located at the village of Savannah, Wayne county, were approved by the State Engineer on October 27, 1921, and a permit was issued by the State Commissioner of Health on November 10, 1921, to the company to discharge the effluent from the proposed plant into the waters of a tributary to Crusoe creek within the village of Savannah, under the following provisions in addition to the usual conditions:

That when necessary the sludge or scum from the proposed plant shall be removed and disposed of in such a manner as to cause no nuisance, and the sludge and scum shall not be allowed to accumulate to a greater combined depth than one foot in any section of the sedimentation tank.

That no storm water or surface water and no whey, skim milk or other wastes containing any considerable amount of putrescible organic matter shall be discharged into the disposal plant.

That whenever the volume of wastes to be treated exceeds 1,000 gallons per day or whenever required by the State Commissioner of Health, satisfactory detailed plans for additional or other works for the treatment of the wastes shall be submitted to the State Engineer for approval; and upon approval of said plans, any or all portions of such works shall be constructed and put in operation at such time or times thereafter as said Commissioner may designate.

SCHENECTADY

Plans for proposed additions to the sewerage system of the eleventh ward of the city of Schenectady were approved by the State Engineer on December 23, 1921, and a permit was issued by the State Commissioner of Health on December 24, 1921, to the department of public works of the city to discharge sewage from the proposed sewers in the eleventh ward into the waters of the Mohawk river through the outlet of the city sewage disposal works within the town of Niskayuna, under the following provision in addition to the usual conditions:

That before January 1, 1923, a thorough study of the entire problem of sewerage and sewage disposal shall be made by a competent expert or experts and that there shall be submitted to the State Engineer and State Commissioner of Health satisfactory comprehensive plans for sewerage and sewage disposal works for the entire city involving necessary modifications of the existing systems of sewerage and sewage disposal works.

SCOTTSVILLE

Plans for a sewerage system and for a sewage disposal plant consisting of preliminary settling tanks, a pump well and outfall sewer to serve the village of Scottsville, Monroe county, were approved by the State Engineer on November 19, 1921, and a permit was issued by the State Commissioner of Health on November 23, 1921, to the board of trustees of the village to discharge effluent from this disposal plant to be constructed in connection with this proposed sewer system, into the waters of Allen creek at the site of the proposed disposal plant, within the town of Wheaton, under the usual conditions.

SHAWANGUNK (T) (School District No. 5)

Plans for an outfall sewer from the John G. Borden High School to the existing sewer below Second street at the Hamlet of Wallkill in the town of Shawangunk, Ulster county, were approved by the State Engineer on December 5, 1921, and a permit was issued by the State Commissioner of Health on December 7, 1921, to the board of education of School District No. 5 of the town of Shawangunk to discharge sewage from this school through the existing sewer below Second street into the waters tributary to the Wallkill river at a point of discharge shown by the approved plans, within the town of Shawangunk, under the following provision, in addition to the usual conditions:

> That on or before January 1, 1923, satisfactory detailed plans for works to treat the sewage of the John G. Borden High School and of the buildings connected or to be connected with the sewer shown by the plans approved on December 5, 1921, shall be submitted to the State Engineer for approval; and that after the approval of said plans, such work shall be constructed and put into operation on or before September 1, 1923.

SHORTSVILLE (Papec Machine Company)

Plans for a sewage disposal plant, comprising a two-story settling tank for the main buildings and two single compartment settling tanks for outlying dwellings, to serve the factory and housing group of the Papec Machine Company located at Shortsville, in the town of Manchester, Ontario county, were approved on June 11, 1921, and a permit was issued on that date to this company, to discharge effluent from this plant into the waters of Canandaigua outlet within the village of Shortsville, under the following provisions in addition to the usual conditions:

> That the length of the single compartment tank No. 2 near the millrace and Race street be increased from 12 feet to 16 feet.
>
> That the cleanout drains from the bottoms of these 2 single compartment tanks be either entirely omitted or terminated at some point where their discharge cannot overflow onto the ground or reach the waters of the millrace or the Canandaigua outlet.

SKANEATELES (T) (Skaneateles Paper Company)

Plans for a sewage disposal plant consisting of settling tanks and outlet sewers to treat the sewage from the Skaneateles Paper Mills and office buildings of the Skaneateles Paper Company in the hamlet of Willow Glen in the town of Skaneateles, Onondaga county, were approved on April 6, 1921, and a permit was issued on April 8, 1921, to the company to discharge effluent from the proposed plant into the waters of Skaneateles outlet within the town of Skaneateles, under the usual conditions.

SOUTHOLD (School District No. 5)

Plans for a sewage disposal plant consisting of a settling tank overflowing successively into 2 large leaching cesspools to serve the Union Free School in District No. 5 of the town of Southold, Suffolk county, were approved on June 7, 1921, and a permit was issued on that date to the board of trustees of this dictrict to discharge effluent from the proposed plant into the ground waters tributary to Southold bay within the town of Southold under the usual conditions.

SPRING VALLEY

Plans for a sewer system, consisting of 13 miles of sewers with 2 pumping stations, and a disposal plant, comprising a screen and grit chamber, double 2-story settling tanks, a chlorination tank and auxiliary sludge beds; to serve the village of Spring Valley, Rockland county were approved on February 17, 1921. On the same date a permit was granted to the board of trustees of the village to discharge effluent from this plant into the waters of Pascack creek within the town of Clarkstown under the following provisions in addition to the usual conditions:

> That the 400 feet of exposed iron sewer pipe along the pond between Lawrence street and the Pearl river be provided with proper cover or means of adjusting itself to temperature changes.
>
> That the screens in the screen chamber be set at an angle of between 30 and 45 degrees from the horizontal and provided with a perforated platform upon which screenings may be conveniently raked to drain.
>
> That the surface of the ground beneath the sludge filters be laid out in valleys in which to place the underdrains; that these drains be laid on a slope of not less than 1 per cent; that no point in the filter bed, including that over the underdrains, be less than 13 inches thick and that a suitable concrete apron or other means be provided to enable the sludge to spread over the bed without unduly disturbing its surface.
>
> That the chlorinating apparatus be installed in duplicate and that spare parts be provided and kept on hand.
>
> That chlorine gas shall be applied uniformly to the effluent from the settling tanks in the proportion of not less than 12 parts of the gas to 1 million parts of effluent before it is discharged into Pascack creek.

SYRACUSE

Plans for sewage disposal works to treat the sewage of the city of Syracuse, Onondaga county, N. Y., were submitted to this Department for approval by the Syracuse intercepting sewer board on December 30, 1920. An application for the approval of the plans signed by the members of the board under date of June 23, 1920, was also received.

Previous Records

Main Outfall Sewer: The records of this Department show that, on September 2, 1920, plans previously reported upon were approved for the final extension of the intercepting sewer to the site of the proposed plant on conditions, among others, that on or before January 1, 1921, satisfactory detailed plans for sewage disposal works and outfall sewers should be submitted to this Department for approval and that after the approval thereof said works and outfall sewers should be constructed and put in operation at such time as the State Commissioner of Health may designate.

Preliminary Approval of Works: On October 25, 1920, a preliminary approval was given to general plans for sewage treatment works submitted on June 25, 1920, with amendments submitted under dates of September 1, 1920, and October 23, 1920. It was stated in the letter giving the preliminary approval that the Department would probably not approve of a storm relief sewer discharging nearer the shore line than 700 feet; that if a single source of power were to be selected it be of a character which would insure continuous pumping operation; that this approval was founded primarily upon the general plans, conclusions and recommendations set forth in the report of the consulting engineers to the intercepting sewer board dated June 1, 1920; and that the approval applied only to such features shown upon the plans as relate to the arrangement and design of the sewage disposal works, pumping station and outfall pipes.

Population: For over 30 years the population of Syracuse has shown the exceptionally uniform and rapid rate of average annual increase of about 2¼ per cent reaching 171,717 in 1920. Though there are gas works and numerous factories, they are located near the water front or are of such a nature that so far as intercepted sewage contribution is concerned, the city may be said in general to be residential.

Water Supply and Sewerage: A gravity supply of about 26 million gallons a day is furnished to about 165,000 of the inhabitants and about the same number are tributary to the main intercepting sewer and proposed treatment plant. This interceptor provides sewerage facilities for all the territory of the city except about a square mile of outlying undeveloped farm land, tributary to Onondaga lake through Butternut creek. Another square mile of the city is sewered into the interceptor on the separate plan. Throughout all the rest of the city the sewage and storm water are combined and cared for by a system of combined sewers whose discharge into the brooks which traverse the city caused a nuisance there and in the Canal Harbor works.

Intercepting Sewers

Intercepting System: To remedy these insanitary conditions, a system of sewers, designed to intercept the maximum dry weather flow of domestic sewage and a certain amount of storm water from the combined sewers of the city, has been constructed. Plans have recently been approved as noted above for an extension of the main collector, or interceptor into which these intercepting sewers discharge. This main interceptor is 90 inches in diameter and has a fall of 9 feet in 10,000 below Hiawatha avenue which would give it a gravity discharge capacity of over 155,000,000 gallons a day when its discharge is not retarded by high water in the lake and provided the coefficient of hydraulic friction used in design be attained in construction. This flow mentioned is equal to twice the estimated maximum dry weather flow from an ultimate population of 400,000 persons in the tributary district of the city. Since the original and branch sewers were designed for rainfalls of from ½ to ¾ inches per hour and the interceptor capacity is equal to only about 1/45th of an inch runoff from the area served, it is obvious that, at times of considerable storms, most of the storm flow and the then commingled domestic sewage will for these short periods flow into the creeks, but even then, at separated intervals and under more favorable conditions for dispersion and dilution than before the construction of the intercepting system.

Basis of Design: The interceptor was designed for an assured dry weather flow of 125 gallons per capita, ½ running off in 8 hours, accompanied by an equal amount of storm water and this appears to be the maximum flow for which the interceptor may be called upon to care.

The following figures abstracted from the engineers' report, cover estimated population and quantity of sewage on which the design of the disposal plant is based:

Estimates of Population and Quantity of Sewage

SYRACUSE	1920	1930	1940	1950	1960
Total population	*171,647	207,000	243,000	282,000	325,000
Tributary population to works	158,000	190,000	220,000	250,000	280,000
Per cent population tributary	92	92	91	89	86
Average rate sewage flow at works, m.g.d.†	30.37	33.21	35.27	37.2	39
Gallons per capita daily §	191	175	160	149	139
Average rate for which works should be designed, m.g.d.‡	22.62	25.46	27.52	30.2	33.6
Gallons per capita daily§	143	134	125	121	120
Average rate of all sewage reaching Onondaga L. m.g.d	31.77	34.91	37.57	40	43
Gallons per capita daily	185	169	155	142	132

* Preliminary census report.

† Average dry weather sewage flow (less than average flow to be treated).

‡ Much of the storm flow included in these quantities will be diverted around the sewage treatment plant and discharged directly into Onondaga lake.

§ Based on tributary population.

Proposed Treatment

Present Plans: The present plans provide for the treatment of the sewage collected by the main interceptor in dry weather and the small portion of the polluted storm flow, in a plant located on the lake front near the junction of Lawroy street and Hiawatha avenue and to discharge from the plant through multiple outlets about ¼ mile from the shore and to discharge the excess flow in times of storm at the adjacent shore line. The sludge is to be buried in disinfecting chemical wastes. In detail: The sewage, from the outlet of a Venturi flume, at the end of the main interceptor, passes through a chamber where at times of heavy storms, which fill the sewer, the portions of storm discharge greater than 55 million gallons a day will flow through large sluice gates or over a long emergency weir and discharge at the margin or shore line of the lake, while the dry weather flow or combined flow at the rate of 55 million gallons a day will pass through a gate into a grit and screen chamber and thence into the pump house. Here it is to be lifted to flow through settling tanks where the sludge will be deposited and the effluent discharged through the multiple outlet mentioned. The sludge is expected to embrace upwards of 60 per cent of the suspended matter in the sewage. It is to be pumped about 2 miles to a point where it is proposed to completely neutralize it by mixing it with about 44 times its dry weight of chemical waste.

Sludge Disposal: A unique opportunity for highly effective disposal of sewage and sludge is stated by the engineers of the board, to exist due to the willingness of a caustic soda and soda ash manufacturer to permit the sludge to be admixed at their disposal lagoons with neutralizing inorganic industrial wastes. The sludge is to be pumped from the disposal plant and discharged with these wastes, which are between 40 and 50 times their volume, into extensive lagoons. The report of the chief engineer for the intercepting sewer board states that this treatment will eliminate the possibilities of offense as well as the cost and expense of operation by high grade labor, with technical supervision of expensive digestion works and drying works. It is to be recommended that formal agreement be made with the manufacturers covering this matter and definite provisions for the treatment of the sludge proposed at the lagoons. It is understood that the soda ash plant is operated continuously. The liquid wastes of this plant are estimated to be 4½ million gallons of which 700 tons dry weight is suspended solids or several times as much as appears necessary to disinfect the city's sludge which the engineers' estimate at about 1/20th million gallons per day in 1920 and 1/14th of a million gallons in 1940 with dry weights of 16 and 23 tons respectively.

Conditions for Effluent Dilution: Onondaga lake seems to afford rather favorable conditions for the disposal of settling tank effluent if properly diffused. This lake and its main outlet stream, the Oswego river below, are not used for municipal water supply. The shores of the lake are very sparsely populated and the lake itself does not seem to be used to any considerable extent for recreation. A somewhat exhaustive study by the engineers of the intercepting sewer board, of the lake's condition with respect to oxygen saturation and replenishment, seems to indicate that with proper operation and an adequate treatment plant the exhaustion of the dissolved oxygen in the upper waters of the lake may be considerably deferred and may not occur, provided the effluent is discharged into 20 feet or more of water ¼ mile from shore, until about 1945 or even still later in case the point of discharge be carried farther out into deep water of the lake. In this connection the following abstracts from the report of the consulting engineers, who devote over 150 pages to the subject, may be of interest:

Oxygen Supply: The oxygen content of the water of the lake, which is somewhat in the form of a rectangle, 4½ miles long by 1 mile wide and 42 feet deep on the average, is estimated at 834 tons; that supplied by the southern tributaries as 27 tons yearly. On the other hand the oxygen demand of the sewage after sedimentation is estimated at 1,750 tons leaving a heavy supply to be provided. This provision is to be principally met by the problematic reaeration of the lake and the diffusion of the oxygen so supplied by the seasonal overturn. There seems also some unappreciated back water flow from the floods in Seneca river which at times rises higher than the outlet and flows back into the lake. These factors must largely determine the satisfactory life of the plant as planned at present. Therefore, any saving in the plan limiting the extent to which the treatment plant removes impurities and diffuses the residual sewage waste in deep water is apt to be one of appearance only. The small margin for adequate dilution afforded at times, until the sewage leaves the Seneca river is indicated by such data as the following:

Watersheds, approximate areas:	Square Miles
Inlet tributaries, Onondaga and Ley creeks and Harbor brook	154
Mid-section tributaries, Liverpool and Nine Mile creeks	139
Tributaries at outlet N. E. end margin and lake	7
Total Onondaga watershed, except flood back flow	300
Total Seneca river watershed above Onondaga outlet	3,140
Total Oswego river at Phoenix, including Seneca and Oneida	4,950

Some Minimum Flows:	Second feet per sq. mile.
Oswego river at Oswego. For 25 days in September, 1898	0.16
Seneca, Baldwinsville. For August, 1899, 445 second feet or	0.15

Flows for several days were very much smaller than these averages.

Features of Location

The location selected for the treatment plant is near the center of the shore front of the level tract around which the city is formed. In the center of the rear portion of this area lies the Barge Canal harbor, the channel to which enters the lake about ¼ mile in a northeasterly direction. This level tract is undeveloped and remains practically a barren waste for a wide zone around the lake shore near this proposed site. The disposal site selected lies in the northwesterly angle of the quadrangle formed by the New York Central and Hudson River railroad and Delaware, Lackawanna and Western railroad on the west and south, respectively, and the former bed of Onondaga creek and Hiawatha avenue on the north and east, respectively, and lies at a distance of more than half a mile from the Barge Canal harbor or any considerably built-up portion of the city.

Structures in Detail

Overflow Chamber: In detail the first structure which the discharge from the 90-inch sewer enters after leaving the Venturi meter is the overflow chamber which, in common with the other masonry structures of the works, is to be built of reinforced concrete. In interior dimensions the structure is 40 feet long by 14½ feet wide and from 12 to 13⅝ feet high. The chamber is subdivided longitudinally by an overflow weir with a level crest running the full length of the chamber, at elevation 7. The crest is about 6 inches in width and 4¼ feet below the roof, giving an overflow weir area of 170 square feet. This weir is pierced by 3 rectangular 4 feet by 5 feet openings controlled by sluice gates, the bottoms of which are at elevation 0.33, affording, when open, an additional raceway gate area of 60 square feet. This gives a total by-pass area of 230 square feet as contrasted with the 4-foot gate of 12½-foot area leading to the treatment plant from the lower end of the chamber or the side of the weir to which the sewage from the interceptor, which has an area of 44 square feet, is admitted. Below the level of the crest or weir the channel behind the spillway has a maximum area of only 32 square feet. The area of the channel in front is 65 square feet but terminates abruptly at a wall containing a gated opening of 12½ square feet area. It is accordingly suggested that the chamber be formed to redirect the flow with the least possible disturbance and greatest economy of its velocity of approach. On account of the fact that the lake level may rise nearly a foot above the weir and cause lake water to flow into the overflow chamber, it is recommended that proper means for securing adequate flash boards to the top of the weir be provided.

Interconnecting Channel: The 4-foot sewage outlet gate from the overflow chamber and series of 4-foot pipe connections leading from it through the screen and grit chambers to the pumps seem to be somewhat restricted if a check of flow and accompanying sedimentation and obstruction is to be prevented in the main intercepting sewer. It takes nearly a 2-foot head or difference in level to force 55,000,000 gallons a day through a 4-foot circular gate. If the screens should become clogged to such an extent as to submerge the screens to elevation 4.12, the elevation of flow above the gate in the overflow chamber will need to be 2 feet higher than this, or 6.12, which is 8½ feet above the invert of the interceptor. The interceptor however is designed to deliver by gravity 55,000,000 gallons a day, with but about 3 feet over the invert. Such impounding would result in making of the interceptor a grit chamber between 1 and 2 miles long. It is recommended that the chamber below and its *passages* be made no less capacious than provided for by the plans as preliminarily approved. Should a proper combination of screen and grit chamber be desired later favorable consideration might be given to such change.

Screen Chamber: The screen chamber is placed 12 feet below the overflow chamber with which it is connected by a 4-foot pipe. It is irregularly elliptical in shape, 38 feet long by 29 feet wide, with walls 14⅛ feet high. It is subdivided into two equal channels. The main channels are 9½ feet wide at the screen emplacements. The counter-balanced cage screens are 7 feet high and 3½ feet deep but are not shown in detail. It is recommended that this chamber and its passages be made no less capacious than provided for by the plans as preliminarily approved; but the structures as shown may be further discussed. The inlet and outlet control gates are not shown in elevation or described, hence the amount of maximum screen submergence is somewhat a matter of conjecture.

Grit Chamber: The grit chamber is an open cast, 17⅛ feet deep by 18 feet wide by 59 feet long. In the bottom are arranged three channels of equal size, each depressed 2¼ feet below the elevation of the invert of the incoming and outgoing 4-foot pipe which connects it, without fall, with the screen chamber and pump house located 10 feet above and below the grit chamber. These three grit or detritus channels are each 4 feet wide and the number in use may be regulated by control gates 2½ feet wide, placed at each end of each channel. No grit removal apparatus is indicated and it is therefore recommended that a traveling crane be mounted on the parapet or side walls and an industrial railway be provided to carry the grit and screening to a place for their disposal. Should it be desired to house the screens and grit channels in the same building to facilitate operation and the removal of detritus from both, such an arrangement might not be objectionable.

Pump Station: The pump house is 58 feet long by 34 feet wide and extends 19¾ feet below the floor level. The brick superstructure, housing the motors, gate stands and offices, is 14 feet high and well lighted. No systems of heating and ventilation are shown. Five similar centrifugal pumps are shown direct, connected to motors on floor above by vertical shafts. The maximum lift from low water to tank level is but 9½ feet, or 17¾ feet, when attempting to drain the pit and at the same time surcharge the settling tanks to elevation 13 to secure head at times of high water in the lake. The minimum lift is about 8 feet. According to information furnished by the designing engineer 4 pumps will be of adequate capacity to handle 55,000,000 gallons per day, leaving 1 pump in reserve or emergency.

Sedimentation Tanks: It is planned to construct 4 radial flow settling tanks 100 feet in diameter each. They are to have conical bottoms and total wetted depths of 8⅛ feet. The screened sewage is to be delivered from the pump chamber by the pumps to a central compartment having a downturned annular opening of about 11 square feet in area, submerged about 2½ feet. From here the sewage flows radially out from the center of the tank to a sharp crested weir encircling its periphery. Here the effluent spills over into a channel leading to the deep water outlet pipe. The sludge which has settled out is to be continually pushed toward a sump at the center and bottom of the cone by a series of plows moving close to the bottom on 4 mechanically revolved submerged arms. From this sump the sludge is pumped by small pumps to the duplicate main sludge pumps in the pump house. The liquid capacity of each of the tanks is 391,600 gallons or 1,566,400 for all 4. This provides a minimum 41 minutes theoretic detention for a 55,000,000 gallon a day flow without deduction for minor tank sections inert or occupied by sludge. The report submitted on December 30 by the chief engineer states that experiments indicate that these tanks will remove as much impurities as planned and that the 5 larger tanks, holding altogether 2,800,000, were needlessly large. No data to warrant the Department in reaching so sweeping a conclusion was submitted and it does not appear likely that sufficiently convincing data could be produced by experimental methods. However, on January 25, 1921, the results of very exhaustive experiments indicative of results approaching this conclusion were presented and since it is possible to require additional units, in case inspection shows that those first installed do not accomplish the stipulated results, it would seem appropriate to approve of the tanks conditionally to the extent proposed.

Sludge Disposal System: As noted above the sludge which accumulates in the settling tank is to be pumped to 2 sludge hoppers in the pumping station. The sludge is to be pumped from these hoppers continuously through 2 miles of 4-inch force main to lagoons where it is to be mixed with chemical wastes. The sludge is to be diluted with sufficient sewage to obtain a velocity through the force main of 3 feet per second.

The sludge drains, leading from the 4 tanks to the sludge hoppers, are each to be of the same diameter as the force main. It would appear therefore that the velocity of the former will be but ¼ of that of the latter. It is suggested that consideration be given to securing self-cleansing velocities in these drains and also that gates with fire-hydrant connection between them and cleaning facilities be provided on all sludge pipes. It is also suggested that any siphons or portions of the sludge piping difficult to replace be built in duplicate, and that the sludge pumps be selected with a view to their accessibility for dissembling and cleaning, and that the low lift sludge pumps be so arranged as to secure a reversal in the direction of flow through sludge pipes when desirable. Although the danger of settlement and clogging resulting from any more than momentary cessation of pumpage in the 2-mile sludge force main appears patent, in the design, insurance against failure in operation seems somewhat lost sight of when effecting a temporary saving. It does not seem advisable to substitute 2 small 28-gallon sludge hoppers with horizontal screens on top of the hoppers for the 2,700-gallon sludge well recommended by the consulting engineers. The pumps to be used are particularly mentioned, in the report of the consulting engineers, as subject to frequent stoppage. Storage for them seems therefore essential. While the risk of shutdowns and lack of flexibility in operation entailed by the omission of the storage well for the main sewage pumps might not be serious, the omission of a provision for temporarily handling sludge during possible periods of simultaneous stoppage of pumps moving this character of material, does not appear permissible, and it is accordingly recommended that a provision be made for the storage of not less than 2,700 gallons of sludge.

Outlet Channels: At the overflow chamber the interceptor is changed in form from a 7½-foot pipe to a passageway 4 feet high by 11 feet wide, including a central partition wall 1 foot thick. For a distance of about 400 feet the portion of the sewage to be treated is diverted through the works, and is then returned to this conduit which continues to the shore. Here one side of the passageway terminates, debouching whatever sewage is diverted into it out upon the shallows at the shore line of the lake, which is shown here to have a depth of less than 1 foot at ordinary lake level for a distance out of over 400 feet and is quite possibly dry land at times. The portion of the passage on the other side of the partition is shown to discharge at the shore line into a 5-foot pipe which, with four changes of direction made under water, discharges into Lake Onondaga, 12 feet below normal water level. This discharge is effected through dispersion outlets in the terminal portion of the pipe which is to be laid on top of a submerged pier which is raised to a height several feet above the lake bed about 1,400 feet from shore.

Effluent Channel: The invert of the overflow chamber at the beginning of the partitioned passageway mentioned is at elevation 2.38, but the passage invert starts here, 2.7 feet higher, at elevation .33. The normal lake level is at elevation 1 so that the bottom of this flat passage here and all its gates will be almost continuously subject to shallow stagnant backwater. It is suggested that consideration be given to the desirability of slightly raising the grade of the passage at this point with a view to alleviating this condition. Since the tank effluent returns to this passage from a surface elevation of 9, or even 12 when necessary, and is to be returned to that portion of the passage whose contents are to discharge at a point about 2,200 feet distant; at times when the water in the lake was higher than the dry weather flow in the sewer this passage would discharge backwards into the latter. For this reason it is recommended that the uncovered part of this passage behind the weir in the overflow be walled higher or covered, and that no other ungated apertures be left below elevation 13 in the channel receiving the effluent from the settling tanks, except those of the submerged dispersion outlet.

Dispersion Outlet: The dispersion outlet shown is 5 feet in diameter and 200 feet long. No detail is given of it or of the subaqueous pile structure, 500 feet long and 17 feet high at its off shore end, which supports it. Thirteen openings are indicated on each side, all in line with the springing line, and a terminal opening 2 feet in height. It is suggested that the spring line apertures be staggered and that a terminal aperture be left in the crown to provide for the escape of gases and buoyant material. As a general proposition, under-water woodwork is extremely costly even when, as here, not particularly hazardous to construct. It is furthermore, not only subject to disintegration, corrosion of its metal bonds, contact with floating materials, navigation at extreme levels and interference with anchors, but is also expensive to construct and maintain above the depth recommended by the consulting engineers after extensive investigation. Furthermore it is not advantageously situated for subsequent prolongation to greater depth. It is accordingly recommended that the dispersion outlet be lowered at least 8 feet or that its main discharge be continued to a point at least 8 feet below the invert now shown, and it is suggested that a covered manhole opening suitable for use by a diver be placed near the end crown of the dispersion outlet pipe.

Conclusions

After a full consideration of the general and local requirements and opportunities for sewage treatment and sludge disposal, and of the essential features of design and a careful examination of the plans and data submitted, it was found that the plans in general appear to be satisfactory but that there were certain features in which modification appeared desirable before the plans were taken up for final consideration, and it was accordingly recommended that the plans be returned to the Syracuse intercepting sewer board and that they be modified in the following respects:

1. That the weir at the overflow chamber be provided with a movable crest or tight flash boards and brackets in order to permit of raising the flow line over the weir to elevation 8 when desirable.
2. That the plans as preliminarily approved be adhered to in respect to passing the contents of one branch of the dual overflow conduit through both the screen and grit chamber with no less adequate treatment and gate capacity than originally planned.
3. That a traveling crane on the parapet of the grit chamber be shown provided or other method provided for removing accumulated detritus.
4. That the combined storage capacity for sludge delivered by the low lift sludge pumps from the settling tanks be made 2,700 gallons as was provided by the approved preliminary plans.
5. That no wall of the channel into which the settling tank effluent discharged be lower than elevation 7.
6. That an ample channel not less than 400 feet long be shown excavated extending through the submerged flat from the end of the shore relief conduit to deep water in the lake.
7. That the dispersion outlet be so constructed that it will terminate with its end approximately in a horizontal position and its crown under not less than 20 feet of water at any stage of the lake.
8. That satisfactory preliminary plans be submitted providing for the method of sludge disposal finally arranged for.

Plans modified in general accordance with the recommendations of this Department were approved on February 11, 1921, and a permit was issued on this date to the Syracuse intercepting sewer board allowing the discharge of effluent from the sewage treatment and outfall works of the city of Syracuse into the waters of Onondaga lake under the following provisions in addition to the usual conditions:

> That a connection having a sectional area of not less than 19 square feet and equipped with gates to prevent back water shall be provided leading from the lower end of the grit chamber to the deep water effluent conduit.
>
> That a suitable traveling crane or other satisfactory means shall be provided for the removal of detritus from the grit chamber.
>
> That the dispersion outlet pipe between stations 20 and 27 shall be generally lowered so that the outlet end shall be 5 feet lower than shown by the plans approved this day; that 4 openings, 2 on each side, staggered, and spaced 25 feet on centers from the end, having a total combined area together with the outlet at the end of the dispersion outlet pipe of not less than 20 square feet, shall be substituted for the 26 openings shown upon the plans; and that a gas vent of approximately 5 inches in diameter, to issue horizontally at the crown of the outlet end of the dispersion outlet pipe shall be provided.

> That all the dry-weather flow of sewage collected by the intercepting sewer together with all wet-weather flow up to 55 million gallons per day shall be passed through and treated in the proposed sewage treatment and outfall works.
>
> That before the proposed sewage treatment and outfall works are constructed, satisfactory detailed contract drawings of said works, including detailed plans for the disposal of the sludge, shall be submitted to and receive the approval of this Department.

Detail contract plans for the sewage outfall works or discharge conduits for the city of Syracuse, designed in compliance with the permit issued by this Department, were approved on June 7, 1921, with the understanding that detailed contract drawings of the sewage treatment works, embracing detailed plans for the disposal of sludge, were to be submitted later. Inasmuch as the permit already granted allowed the discharge of sewage effluent from the entire works when completed, no permit was issued in connection with this portion of the contract drawings approved on June 7, 1921.

TARRYTOWN

Plans for sewer extensions in Union avenue, Sunnyside avenue and Neperan road in the village of Tarrytown, Westchester county, were approved on May 20, 1921, and a permit was issued on the same date to the board of trustees of the village to discharge sewage from the proposed extensions into the waters of the Hudson river at the foot of Josephine street, within the municipality of Tarrytown, under the following provision in addition to the usual conditions:

> That whenever required by the State Commissioner of Health, satisfactory disposal works for the treatment of the sewage of the entire village of Tarrytown shall be constructed and put in operation under and in accordance with plans which shall first be submitted to and receive the approval of said Commissioner.

TUCKAHOE

Plans for sewer extensions on Armour Villa avenue, Summit street and Marble place in the village of Tuckahoe, Westchester county, were approved on April 23, 1921, and a permit was issued on that date to the board of trustees of the village to discharge sewage from these extensions into the waters of the Hudson river through the Bronx Valley sewer within the city of Yonkers, under the following provision in addition to the usual conditions:

> That the existing sewer on Garrett street, into which the proposed sewer on Armour Villa avenue is proposed to discharge, be relieved or increased in size whenever necessary or required by this Department.

TURIN (T) (School District No. 9)

Plans for a sewage disposal plant consisting of a settling tank, a dosing chamber and a subsurface irrigation system to serve the school of School District No. 9 of the town of Turin, located at the village of Turin, Lewis County, were approved by the State Engineer on December 12, 1921, and a permit was issued by the State Commissioner of Health on December 16, 1921, to the board of trustees of this district to discharge effluent from the proposed plant into the ground waters tributary to Mill creek on the school property within the town of Turin, under the usual conditions.

VILLENOVA (T) (Villenova Cheese Factory Company)

A permit to discharge effluent from a disposal plant to serve the cheese factory of the Villenova Cheese Factory Company, located about one mile west of South Dayton in the town of Villenova, Chautauqua county, into the waters of Conewango creek, within the town of Villenova, was granted to this company on June 30, 1921, under the following provision in addition to the usual conditions:

> That no sewage or wastes containing human excreta or washings and no whey, skim milk, buttermilk or other wastes containing any considerable amount of putrescible organic matter shall be discharged into the disposal plant or Conewango creek.

WARSAW

Amended plans for sewers and sewer extensions in the village of Warsaw, Wyoming county, were approved by the State Engineer on November 3, 1921, and a permit was issued by the State Commissioner of Health on November 10, 1921, to the trustees of the village of Warsaw, to discharge sewage from the proposed sewers on Court and other streets and through private rights of way into the waters of Oatka creek, within the village of Warsaw, under the following provision in addition to the usual conditions:

> That a thorough study be made of the entire system of sewerage and sewage disposal of the village of Warsaw, and that on or before November 1, 1922, plans for a system of sewers which shall serve the entire village, into which only sanitary sewage shall be admitted, be submitted to the State Engineer for approval.

WATERTOWN

Plans for sewer extensions on Haley street between Myrtle avenue and Washington street in the city of Watertown, Jefferson county, were approved by the State Engineer on August 30, 1921, and a permit was issued by the State Commissioner of Health on August 31, 1921, to the Common Council of this city to discharge sewage from these proposed extensions into the water of the Black river through the existing outlet at the lower end of Engine street, within the city of Watertown.

WESTMORELAND (T) (Bartlett Milk Station)

A permit to discharge effluent from an industrial waste disposal plant to serve the milk station of the Bartlett Milk Station, located in the hamlet of Bartlett, in the town of Westmoreland, Oneida county, into the waters of a tributary to Jones creek, within the town of Westmoreland, was granted to H. J. Wolfe on June 7, 1921, under the following provision in addition to the usual conditions:

> That no domestic sewage or washings containing human excreta and no whey, buttermilk, skim milk or other wastes containing any considerable amount of organic matter, shall be discharged into or pass through the disposal plant.

WILSON

Plans for a sewer system and for a sewage disposal plant consisting of a two-story settling tank, an effluent chlorination apparatus and a sludge drying bed and an outfall sewer with submerged discharge to serve the village of Wilson, Niagara county, were approved by the State Engineer on November 25, 1921, and a permit was issued by the State Commissioner of Health on

December 13, 1921, to the board of trustees of the village to discharge effluent from this plant to be constructed in connection with this sewer system into the waters of Lake Ontario, near the mouth of Twelve Mile creek, about 600 feet from shore, within the village of Wilson, under the following provisions in addition to the usual conditions:

That the chlorinating apparatus to be installed shall have a capacity of not less than 15 parts of chlorine per million gallons of sewage by weight and that chlorine shall be applied to the effluent at a point not less than 5 feet below the surface of the effluent at the rate of not less than 5 parts chlorine per million gallons by weight and in such other or additional amounts as the State Commissioner of Health may from time to time hereafter designate.

WOODRIDGE

Plans for a sewer system and sewage treatment plant, consisting of settling tanks and sprinkling filters, for Woodridge, Sullivan county, were approved on May 14, 1921, and a permit was issued to the board of trustees on the same date to discharge effluent from this proposed treatment plant into the waters of Sanbury river at a point below the dam of Wood's pond, within the town of Fallsburg, under the following provisions in addition to the usual conditions:

That no flushing or other inlet from any creek to the sewer be provided.

That properly guarded vents for the sludge beds be installed at points outside of the surface of the beds.

That before the construction of any street sewers not shown on these detailed plans, plans for such sewers shall be submitted to and receive the approval of this Department.

That whenever necessary or required by the State Commissioner of Health, additional units or portions of the works shown on the plans approved this day shall be constructed and put into operation.

YORKTOWN (T) (Mohegan Inn Corporation)

Plans for a sewage disposal plant consisting of a liquefying tank followed by leaching cesspools, six to be constructed at once; to serve the summer hotel of the Mohegan Inn Corporation, located in the hamlet of Mohegan Inn, near Mohegan lake, in the town of Yorktown, Westchester county, were approved on April 6, 1921, and a permit was issued on the same date to the Mohegan Inn Corporation to discharge effluent from this proposed plant into the ground waters tributary to the outlet from Mohegan lake, within the town of Yorktown, under the following provision in addition to the usual conditions:

That the effluent pipe shall be provided with manholes or cleanouts at all angle points and shall have a grade of not less than 1 foot in 300.

GENERAL INVESTIGATIONS RELATING TO SEWERAGE AND SEWAGE DISPOSAL

During the year of 1921 a large number of matters relating to the collection and disposal of sewage were brought to the attention of this department either by direct complaints from persons affected or by local authorities who requested assistance and advice in meeting their problems.

A comprehensive investigation of the municipality in nearly every case is made by a representative of the Division of Sanitation and a report prepared describing the existing sewerage conditions and method of disposal of the sewage and recommending steps to be taken to provide a permanent remedy for the problem. Although this department is without the power to compel the installation of systems of sewerage and sewage disposal and consequently the completion of its work is curtailed, yet. in many instances effective action is taken by the local authorities on the advice and at the instigation of this department.

The reports of the investigations made by this department in a few important cases which have come before it during 1921 are given below and a list is appended of all other cases.

EASTWOOD

An investigation of conditions of sewerage and sewage disposal in the village of Eastwood, Onondaga county, N. Y., was made by Mr. W. C. Emigh, assistant engineer in this Department, on January 21, 1921. This investigation was undertaken as a result of a communication from the clerk of the village of Eastwood on behalf of the board of trustees, in which it was stated that difficulty had been experienced in the operation of the sewage pumping plant and disposal works and in which advice was requested relative to the method of handling the situation.

In the year 1913 plans were approved by this Department for sewerage and sewage disposal for the village of Eastwood. These plans included a sewage pumping plant and two sewage disposal plants. The topography of the area within the village is such that it was considered more desirable to treat the sewage in two plants than to conduct it entirely to one plant. The sewer system was designed to care for a population of 10,000 and the original disposal plant construction was intended to treat the sewage from a maximum population of 1,000 at each plant. A portion of the village was so low as to require that the sewage from it be pumped into a higher sewer. Sewage from the residential part of this low, level section is collected in sewers laid in the streets but is conveyed to the pumping station in an 8-inch sewer laid on private property and extending for a distance of about 2,000 feet parallel and closely adjacent to the right of way of the New York Central railroad. This sewer is laid on a grade of .5 per cent in low land which at times is saturated with ground water.

In addition to the domestic sewage reaching the pumping plant, as above described, sewage and industrial wastes from the plants of the Pierce, Butler and Pierce Company and the Syracuse Rendering Company are conveyed to the pumping plant. Normally about 40 toilets, 20 lavatories and a number of shower baths are in use. There is also a kitchen used for preparing lunches which are served to employees. The company purchases about 500,000 gallons of water per month from the Syracuse Suburban Water Company. The plant of Syracuse Rendering Company is located within the village limits at a distance of about ¼ mile from the pumping station. An 8-inch cast-iron pipe with leaded joints extends from the plant to the village system.

The wastes are said to consist principally of sanitary sewage and cooling water. On at least two occasions, however, owing to fire or other causes considerable quantities of organic matter have overflowed from the vats into the drains and thence into the sewers. The drainage from a building in which hides are salted and cured also discharges into the sewer.

At the time of the inspection, owing to the clogging of the sewer leading to the village pumping plant, the sewage was rising through the tops of manholes on the premises of the Rendering Company and flowing over the surface of the ground into a ditch in which it flowed a short distance to a second ditch on the railroad right of way. The sewage coming from the building in which hides are cured was pooled upon the surface of the ground. The engineer of this Department found a considerable quantity of organic matter, apparently consisting largely of fleshing from the hides, which had settled out of the sewage in these pools. The manager of the plant stated that formerly the waste containing these fleshings had been evaporated but that the practice had been discontinued on the ground of impracticability.

Industrial wastes of this class contain impurities largely in excess of the quantities contained by the average domestic sewage. There can be little doubt that the discharge of this waste into the village sewer not only tends to cause difficulty with the operation of the pumping plant but throws an unduly heavy load upon the disposal plant. In view of the excess strength of this waste over that of ordinary domestic sewage, it appears advisable that the Syracuse Rendering Company install a plant to effect a preliminary treatment of their industrial wastes before discharge into the village system. Such a plant should include one or more tanks for the settlement of the wastes with the outlet so constructed as to trap any greases which may enter the sewer.

The village sewage pumping plant is located on Nichols street. The sewage reaching it first enters a circular well in which it passes through a horizontal bar screen. The well is 15 feet in diameter with a depth below the operating floor of 25 feet. This floor is about 3 feet below the ground surface. A concrete partition wall is constructed on the diameter of the well. The sewage after passing through the bar screen flows through two ports in the partition wall at the well floor level into the pump chambers. The two pump chambers are separated from each other by a concrete wall also provided with an interconnecting port. Each of the three ports is fitted with a gate operated from the main floor. A pump is installed in each of the pump chambers. From the pumps the sewage is forced through about 350 feet of cast-iron pipe to a point on Burnet avenue from which point it flows by gravity a distance of 3,000 feet to the southerly disposal plant.

The pumping equipment consists of two centrifugal sump pumps. The smaller is a 4-inch pump of 400 gallons per minute rated capacity at a speed of 1,150 r. p. m. This pump is driven by a direct connected 10 horsepower, 3 phase, 220 volt, 1,150 r. p. m. induction motor. Definite data could not be obtained at the time of the investigation regarding the size of the largest unit, but it was thought to be a 6-inch pump. It is driven by a 15-horsepower motor. A 16-horsepower Fairbanks gas engine, 350 r. p. m., connected by bevel gears with the pump shaft is also provided for emergency use in case of failure of the electric power.

At the time of the investigation it was learned that for several years considerable trouble had been experienced with the operation of the pumping plant. It is reported that large solids reach the plant and that these solids interfere seriously with the operation of the pumps and especially with the smaller of the two units. It was found that the larger pump had been dismantled for repairs and had not been reassembled. Sewage was standing in the well to a depth of about 14 feet, thus making it impossible to examine the smaller pump. The smaller unit was operating at the time but in an attempt to decrease the head against which it was pumping it had been disconnected from the pressure sewer and was discharging onto the surface of the highway through a line of fire hose extending through a window. Although the rate of pumping was not measured it was evident from the volume of the stream issuing from the hose that the pump was delivering only a small fraction of its rated capacity.

The sewage as it flowed upon the highway appeared to be much diluted. The plant of the Pierce, Butler & Pierce Company was contributing only a small quantity of sewage at the time, due to restricted operation. No sewage was reaching the pumping station from the rendering company plant, due to clogging of the sewer, as noted. It therefore appeared probable that the greater part of the sewage pumped resulted from ground water infiltration in the line of sewer paralleling the railroad, as previously described.

From this inspection it is evident that the pumping plant should be thoroughly overhauled. Whether or not the present pumping equipment can be placed in condition to satisfactorily handle the sewage reaching it could not be determined by our engineer owing to the depth of sewage in the well at the time. It is advisable that the mechanical equipment be carefully inspected by an engineer familiar with this type of machinery to determine the extent of the necessary changes.

It is further advisable that means be found to prevent the considerable ground water infiltration which apparently existed at the time of the inspection. The entrance of this ground water into the pump well not only increases the cost of pumping but throws an unnecessary burden upon the plant which at times may combine with the sanitary sewage and industrial wastes entering the well to overtax the capacity of the equipment. A careful inspection should be made of the sewers to determine the location of the points of infiltration. A survey should also be made of all houses the sewage from which reaches the pumping plant, to discover any roof connections which may have been made to the sewer. Such a study would show the most practical method of correction of the conditions, whether relaying of a section of sewer, the substitution of bituminous joints or the replacement of a section of the sewer by iron pipe. After the determination of the proper method, the work of correction should be undertaken at as early a date as conditions permit.

The two village disposal plants were designated and have been constructed along similar lines and as no serious difficulties have been experienced with the operation of the northerly plant only the southerly plant into which the sewage is pumped was inspected. This plant consists of a settling tank of the two story Imhoff type, a dosing siphon and sludge drying bed and a sprinkling filter. The sewage chamber of the settling tank is designed to afford a detention of 2½ hours when receiving the sewage from 1,000 people under the assumed per capita consumption. The sewage chamber is rectangular but the sludge chamber is circular in plan. Sludge storage is provided for a period of six months. It was found that the scum was frozen in the gas vent compartment and that some scum was floating on the surface of the sewage in the sewage chamber.

From the settling tank the sewage after passing over a weir flows into a dosing chamber adjacent to the tank. An 8-inch automatic siphon is installed in the chamber. Upon discharge from the dosing chamber, the sewage flows under pressure a distance of about 300 feet to the sprinkling filter. This filter is 41 feet 5 inches by 58 feet 6 inches in plan and has a depth of 5 feet 3 inches. The filtering medium is crushed stone ranging from 1½ to 2½ inches in diameter. The eleven nozzles provided are staggered and spaced on 13-feet 6-inch centers. Of these nozzles, two, at the time of the inspection, were without spindles and in consequence of this condition were throwing large streams onto the bed causing pooling. The remainder of the nozzles appeared to be operating satisfactorily with the exception of one, the head upon which was much less than upon the others. Although no final settling tank is provided the effluent, as far as it could be observed in the effluent manhole, appeared to be fairly clear.

From the preceding brief description of the condition of the disposal plant it is evident that greater care and attention should be exercised in its operation. The nozzles should at all times be kept in operating condition and any obstruction which occurs in the pipes or nozzles should be promptly removed. Any scum which collects upon the surface of the sewage in the sewage chamber of the tank should be skimmed off and the gas vents should be kept open to allow the escape of gases.

It is to be noted in connection with the disposal plants that each was originally designed to care for the sewage from a maximum of 1,000 persons. As the present population is said to be not less than 2,500 persons and as a considerable quantity of sewage reaches the plants from the industrial concerns previously described together with a quantity of ground water, it appears probable that the present plants are overtaxed. The original design provided for additional units as these should become necessary. In order to determine whether either or both of these plants are actually overtaxed a careful survey should be made of the system contributing to each plant together with observations of the quantity of sewage flowing from the industrial establishments and the volume of ground water infiltration. The scope of the recent inspection did not permit an investigation into these details nor is it possible for this Department to undertake such a study. The village authorities should, however, instruct the village engineer to make a careful study of the situation and if found that the existing plants are operating beyond their capacity, the additional construction necessitated thereby should be undertaken at an early date.

As a result of the investigation and after a careful consideration of the conditions of sewerage and sewage disposal in the village of Eastwood, it was pointed out in a report dated February 9, 1921, that the difficulty experienced in the operation of the pumping plant and sewage disposal plant was due to:

1. The inclusion in the sewage reaching the pumping plant of industrial wastes containing large quantities of organic matter much of which is in the form of solids.
2. Inadequate pumping equipment at the village sewage pumping station.

It was therefore recommended:

1. That the village of Eastwood require the Syracuse Rendering Company to install a suitable sewage treatment plant to afford a preliminary treatment of their wastes before discharge into the village sewers.
2. That the village authorities of Eastwood instruct their engineer to carefully examine the condition of the pumping equipment at the sewage pumping station and that if the present machinery is found to be inadequate new equipment be installed at the earliest possible date.
3. That the village authorities of Eastwood instruct their engineer to make a careful survey of the quantity of sewage reaching each of the two village disposal plants to determine whether or not these plants are overtaxed and that if the plants are found to be operating beyond their capacity new units be added as required.
4. That a careful investigation be made to determine the point or points of entrance into the sewer system of ground or rain water and that proper means be adopted to exclude these waters from the system.

Copies of the report on the investigation were sent to the Sanitary Supervisor of the district, the President and Board of Trustees of the village of Eastwood and the Syracuse Rendering Company.

RICHFIELD SPRINGS

An investigation of the disposal of sewage from Richfield Springs and of the alleged pollution of ice cut from Canadarago lake and used by residents of the village of Schuyler Lake, N. Y., was made on July 7, 1921, by Mr. A. I. Howd of this Division as a result of a complaint made to this Department on June 17, 1921.

Richfield Springs is an incorporated village, having a population of about 1,400, located in the northern part of Otsego county. The village is located at the head of Canadarago lake, a body of water about 3.8 miles in length and varying from about 0.5 to 1.2 miles in width. The sewage of the village, including the wastes from a milk station and certain mills, is discharged into Ocquionis creek, the inlet of the lake. Schuyler Lake is an unincorporated village having a population of about 350, located in the town of Exeter at the foot of Canadarago lake, 6 miles south of Richfield Springs.

The matter of the pollution of Ocquionis creek by sewage and wastes from the village of Richfield Springs has been before the Department in the past, a representative of the Department having made an investigation on January 30, 1909. The report upon that investigation, dated February 8, 1909, pointed out that the stream was flowing full yet the influence of the sewage discharged into it was plainly visible for more than 1/3 the width of the stream for several hundred feet down stream from the point of discharge. It was also pointed out that owing, doubtless, to the comparatively high water stage of the stream and to the low temperature no nuisance could be noticed in the vicinity of the point of discharge of the sewage at the time of that inspection, but that it was reasonable to assume that during the warm season when dry weather conditions prevail and the amount of sewage discharged at this point was over three times the discharge at that time the stream would be seriously polluted.

Under date of February 19, 1909, the trustees of the village of Richfield Springs made application to this Department for the issuance of a permit allowing the discharge of sewage from the village into Ocquionis creek. On July 15, 1909, permission was given to the board of trustees of Richfield Springs to discharge sewage from the main outlet sewer of the village sewer system into Ocquionis creek, at the point of outlet near the grounds of the Richfield Springs Agricultural Society under the following conditions:

" I. That this permit shall be revocable at any time or subject to modification or change when in the judgment of the State Commissioner of Health such revocation, modification or change shall become necessary or desirable by reason of the condition of pollution of the waters of Fish Creek or of Canadarago Lake.

" II. That whenever required by the State Commissioner of Health, complete plans satisfactory to this Department for the separation, collection and treatment of the entire sanitary sewage of the village of Richfield Springs shall be submitted to this Department for approval; and any or all portions of the sewage disposal plant and intercepting sewers shown by said plans that may be stipulated at the time of approval of said plans shall be constructed and put in operation within the time then specified."

The present investigation disclosed the following facts in regard to the pollution of Ocquionis creek. The village sewers receive storm water as well as domestic sewage and trade wastes and have their main point of discharge in Ocquionis creek near the fair grounds of the Richfield Springs Agricultural Society. Although it was impossible to locate the exact point of discharge of the outfall sewer at the time of the inspection, nevertheless, the effect of the sewage discharge was plainly evident. The creek is very sluggish and the flow is hardly perceptible. The waters of the stream for a considerable part of its length below the probable point of sewage discharge, were wholly or in part covered with a thick, black scum and large particles of black sludge which had evidently arisen from the bed of the stream. The stream was in a grossly polluted and very insanitary condition. Other village sewers discharge smaller amounts of sewage into the creek at different points within the village.

The wastes from the factory of the Borden's Farm Products Company are discharged into the village sewer system. In the past the milk received at this plant has been separated, the cream shipped and the skimmed milk made into casein. The whey has been discharged into the sewers and it is alleged that large quantities of skimmed milk have also been discharged into the sewers which may be responsible to a certain extent for the insanitary conditions of the creek.

The wastes from a mill of the Utica Knitting Company, engaged in the manufacture of ladies and children's underwear, are discharged into the creek at a point in the village. The wastes consist principally of bleaching and washing waters and amount to about 100,000 gallons daily. The wastes probably contain variable amounts of caustic soda, bisulphite, bleaching oil, chlorine and sulphuric acid. The mill was in operation more or less during the past winter and at the time of the inspection was in full operation.

The superintendent of the mill stated that no dyeing had been done at this mill for several years. The discharge of wastes discolored the stream somewhat at the point of discharge, but apparently no conditions of nuisance were created.

Schuyler Lake village was visited and the complainant was interviewed. Several cakes of ice taken at random from the ice-house of the complainant were inspected. Each cake of ice examined appeared to contain a number of light pink spots in the center of which dark brown substances were noticeable. As the ice was cut away to examine the brown substances, the pink coloration became less and less apparent and finally could not be noticed as the dark brown matter was reached. The matter seemed to be of a greenish-brown color, resembled decayed algae growths and a slight but distinct disagreeable odor resembling decaying algae was detected upon close observation. Samples of ice containing the pink coloration and the brown substances were collected and later examined under the microscope at this office. The examination confirmed the observations in the field that the brown substances were algae growths or aquatic plants. These particular growths belong to the Chlorophycoac and are of the Ulothrix genera. No sewage or particles of sewage were noticeable in the ice.

In view, however, of the polluted and insanitary condition of Ocquionis creek which is caused principally by the discharge of sewage and wastes from the sewer system of the village of Richfield Springs, the village should, in accordance with the provisions of the permit issued to them by this Department on July 15, 1909, provide as soon as possible for the separation, collection, and treatment of all the sewage of the village before it is discharged into Ocquionis creek. The village authorities should employ a competent sanitary engineer to prepare plans for the separation, collection, and treatment of the sewage and submit the plans at an early date to the State Engineer and Surveyor for approval in accordance with the provisions of Chapter 510 of the Laws of 1921. At the same time application should be made to this Department for permission for the discharge of effluent from such treatment works into the waters of the State.

As a result of this inspection it seems that the alleged pollution of ice cut from Canadarago Lake and used by residents of Schuyler Lake is not caused by dye-stuffs and sewage but the ice does contain algae growths, or aquatic plants. The presence of algae in the ice might have been caused by several conditions, such as cutting the ice in shallow water containing algae growths or on account of the poor ice season of the past winter which caused intermittent freezing and thawing of the ice. Under these conditions the algae might have been washed onto the ice in the lake during a thaw or freshet and then frozen in the ice during a subsequent cold spell so that algae could not be expelled from the ice during the natural process of freezing.

Canadarago Lake is of sufficient size and capacity to provide a long period of storage of the water and the sewage discharged into the upper end of the lake is subject to natural processes of purification by sedimentation and oxidation before it reaches the lower end of the lake. As to the actual danger from the use of ice cut from waters that received pollution, it may be stated that in the process of freezing a very large percentage of impurities, including bacteria are mechanically excluded, that is the number of bacteria in the ice is only a small percentage of the number of bacteria in the water from which the ice is formed or taken. It may be stated further that when ice is stored for any considerable period, bacteria that were originally present die off very rapidly. Experience has uniformly shown that in ice that has been stored these bacteria have been reduced to such an extent that after a period of say two months, substantially all of the bacteria have been destroyed. This means that the purifying effect of freezing and low temperature under the conditions found in ice is ordinarily as great as that accomplished by artifical water purification processes. It seems, however, that ice cut from Canadarago Lake at times contains algae which render it objectionable. It would therefore seem advisable not to use the ice for cooling by immersion and in the future to cut the ice in portions of the lake free from algae growths.

In view of the above facts the following conclusions were made in a report dated August 26, 1921:

1. That the discharge of sewage and wastes from the main outfall sewer of the village of Richfield Springs causes gross pollution of Ocquionis creek and creates very insanitary conditions.
2. That the discharge of large quantities of skimmed milk or other wastes having large quantities of decomposable organic matter from the factory of the Borden's Farm Products Company into the village sewers is apparently responsible to a certain extent for the creation of the insanitary condition of the creek.
3. That the samples of ice cut from Canadarago Lake, used by residents of Schuyler Lake, and shown our representative, contained algae growths belonging to the Chlorophyceae and of the Ulothrix genera.

It was therefore recommended:

1. That the village of Richfield Springs provide as soon as possible for the separation, collection, and treatment of all the sanitary sewage of the village before its discharge into Ocquionis creek.
2. That the village employ a competent sanitary engineer to prepare plans for the separation, collection, and treatment of all the sanitary sewage of the village and submit the plans to the State Engineer and Surveyor for approval and make application to this Department for a permit to discharge effluent from such treatment works in accordance with the provisions of Chapter 510 of the Laws of 1921.
3. That the village authorities require that the Borden's Farm Products Company discontinue the discharge of skimmed milk and other wastes containing large amounts of decomposable organic matter into the village sewers.

Copies of this report were sent on August 30, 1921 to the local boards of health of the town of Exeter and the village of Richfield Springs, to the Sanitary Supervisor of the district, to the village authorities and to the complainant. On September 30, 1921 the president of the village and members of the board of trustees of the village of Richfield Springs called at the Department and conferred with the Director of the Division of Sanitation in regard to the disposal of sewage of the village. The village officials agreed to employ an engineer at once to prepare plans for the disposal of the sewage and submit the plans to the State Engineer for approval.

WARSAW

An investigation of the sewerage conditions of the village of Warsaw, Wyoming county, with special reference to the pollution of Oatka creek by the discharge of untreated sewage from the village was made on July 18, 1921 as a result of complaints from residents of the village.

The village is provided with a public water supply and has a public sewerage system which covers the greater portion of the eastern half of the village and part of the western section of the village. Plans and specifications for a public sewer system including general plans for sewage disposal were approved by this Department on January 28, 1902. These plans also showed the combined sewers which had been constructed before the plans were approved in the eastern part of the village. These combined sewers covered the greater portion of the eastern half of the village and discharged into Oatka creek through a 36-inch sewer between Court street and North street extended, and through a 24-inch sewer near the foot of North street extended. The system for the western section of the village and for a portion of the village east of the creek was designed on the separate plan, and provided for intercepting the dry weather flow of sewage from the 36-inch and 24-inch existing combined sewers at Mechanic street.

The approved plans also provided for carrying the domestic sewage from the section west of Oatka creek across the creek to the eastern side of the creek at Court street through a 15-inch sewer. This sewer, after increasing in size to 18 inches, was shown extending east on Court street to Mechanic street where it was to connect with the sewers serving the eastern portion of the village. From the intersection of Mechanic and Court streets the domestic sewage and the dry weather flow of the combined sewers were to be conveyed through an 18-inch sewer in Mechanic street and through private property to Culver avenue. At this point the sewer was to be increased in size to 20 inches in diameter and was to extend to the proposed disposal plant consisting of a septic tank and contact beds to be located on the east side of Oatka creek near the northerly boundary line of the village. A note on the approved plans indicated that the disposal plant was to be constructed when required by the State Department of Health. The plans also show a storm water sewer on West Buffalo street and in Oak street discharging into the creek at the Buffalo street bridge.

The recent inspection showed that the approved plans have not been followed very closely in the construction of the domestic or separate sewers, but many of these sewers have been and are being constructed in general accordance with amended plans recently prepared by consulting engineers for the village. These revised plans, however, were not submitted to nor approved by this Department as required by the Village Law. A domestic sewer has been constructed in Maples street and West Court street. This sewer serves some 25 houses and discharges into Oatka creek at the Court street bridge. Another sewer has been constructed in West Buffalo street. This sewer, instead of extending west on Buffalo street to Maples street thence on Maples street to Court street and east on Court street and across the creek to Mechanic street as provided by the original and approved plans extends through private property west of the public school house to Court street and empties into the creek opposite the house of one of the complainants some 50 feet north of the Court street bridge. Only two or three connections including the school house have thus far been made to this sewer, which has just been completed. Although no nuisance was created by the discharge from this sewer at the time of the inspection, it is designed to serve considerable population and a serious nuisance will in all probability be created when the school house opens in the fall and the houses along the sewer are all connected. Domestic sewers are also being constructed in accordance with the revised plans referred to in East Buffalo street, Murray street and through private property east of Oatka creek, and it seems that the village authorities contemplate temporarily emptying the sewage from these sewers into the creek near Court street through a new outlet. No new sewer outlets into the creek within the developed sections of the village should be constructed, and immediate steps should be taken to extend the existing outlets at Court street to a point below the built-up portion, pending the construction of the village sewage disposal plant. Considering the number of new sewers under construction and the consequent increase in the amount of sewage discharged into the creek the conditions of pollution of Oatka will soon be, if it is not already, so serious that it will be necessary for the village to provide for at least a partial treatment of its sewage.

The construction of the sewers referred to above constitutes a violation of the Village Law and of Article V of the Public Health Law, inasmuch as the plans for the sewers recently constructed and under construction have not been submitted or received the approval of this Department, and since no permit for the discharge of sewage into the creek at Court street has been issued to the village. The inspection also showed that the lower portion of the 36-inch combined brick sewer below Court street, shown by the approved plans is not covered, but the sewage from this sewer flows in an open ditch to the creek, a distance of a few hundred feet. The open section of the sewer is only two or three hundred feet from the rear of the houses on East Mechanic street and gives rise to objectionable conditions. This section of the sewer should be covered as soon as possible.

The report upon the investigation dated July 30, 1921 contained the following conclusions:

> 1. That the village has constructed sewers under amended plans not approved by this Department, thereby violating the village law.
>
> 2. That two new sewer outlets into Oatka creek have been constructed by the village at Court street and that sewage is discharged therefrom in violation of the Public Health Law, since no permit for the discharge of sewage at this point has been issued by this Department.
>
> 3. That objectionable conditions are created by the open 36-inch combined sewer near Mechanic street, and by the discharge of raw sewage into the creek in close proximity to dwellings in the village.
>
> It was therefore recommended:
>
> 1. That immediate steps be taken to cover the existing 36-inch sewer below Court street and to extend the 2 outlets at Court street to points below the built-up section of the village pending the interception and disposal of the entire sanitary sewage of the village.
>
> 2. That the village authorities at once prepare plans for both past and proposed amendments to the original approved plans and for any other changes in its sewage system, and that such amended plans be submitted to the State Engineer for approval as required by chapter 510 of the Laws of 1921, and that application be made to this Department for permit to discharge from new outlets.
>
> 3. That steps be taken by the village authorities to provide for the interception and disposal of its sewage as soon as possible.

Copies of this report were sent on August 5, 1921, to the president of the village of Warsaw, to the local health officer, to the sanitary supervisor of the district and to the complainant. On August 11, 1921, a communication was received from the village clerk stating that the board of trustees of the village voted to carry out the recommendations of the report and had engaged an engineer to prepare plans. Plans for sewers and sewer extensions for the village were approved by the State Engineer on November 3, 1921, and on November 10, 1921, permission was given by this Department to the board of trustees of the village of Warsaw to discharge sewage from the proposed sewers into Oatka creek on certain conditions.

In addition to the above, inspections were made and reports written in matters relating to sewerage and sewage disposal at the following places: Colonie (town), Menands (three inspections), Cornwall, Glenville (town), Alplaus, Guilderland (town), McKownville, Hastings-on-Hudson (two inspections). Long Beach, Norfolk, Oyster Bay (town), Farmarde Farms and Pine Hill.

PROTECTION OF PUBLIC WATER SUPPLIES

ENFORCEMENT AND ENACTMENT OF RULES AND REGULATIONS DURING 1921 FOR THE SANITARY PROTECTION OF THE PUBLIC WATER SUPPLIES OF NEW YORK STATE

The enforcement and enactment of rules and regulations for the protection from contamination of public water supplies in accordance with the provisions of Article V of the Public Health Law is one of the most important functions of the State Department of Health. This law outlines in detail the procedure to be followed in the enforcement of the rules. In general the local authorities in charge of the water supply are largely responsible for the carrying out of the procedure in conjunction with the State Department and the local board of health.

Of the 535 public water supplies in the State, 89 are now protected by such rules and regulations and requests have been received from the authorities in charge of 4 other supplies, which will be enacted as soon as the necessary field investigation can be made. Rules and regulations have been enacted in 1921 for the protection of the public water supplies of Beacon, Brocton, Canton, Newark and Nunda and tentative rules have been prepared for Lake Placid and Liberty. Requests have been received during the year for the enactment of rules and regulations for the protection of the public water supplies of Champlain, Collins, Hyde Park and Wappingers Falls.

BEACON

Rules and Regulations

The rules and regulations hereinafter given, duly made and enacted in accordance with the provisions of sections 70, 71 and 73 of chapter 45 of the Consolidated Laws (Public Health Law), as hereinbefore set forth, shall apply to all natural and artificial reservoirs and to all watercourses tributary therto or ultimately discharging into said reservoirs, these bodies of water being sources of the public water supply of the city of Beacon, Dutchess county, New York. The term " reservoir " wherever used in these rules is intended to mean and refer to the " Beacon Pocket " and " Melzingah " storage and impounding reservoirs which serve as sources of this public water supply. The term " watercourse " wherever used in these rules is intended to mean and include every spring, pond (other than artificial reservoirs and filter basins), stream, ditch, gutter or other channel of any kind, the waters of which when running, whether continuously or occasionally, eventually flow or may flow into the reservoirs tributary to the public water supply of the city of Beacon.

Wherever a linear distance of a structure or object from a reservoir or from a watercourse is mentioned in these rules it is intended to mean the shortest horizontal distance from the nearest point of the structure or object to the high-water mark of a reservoir or to the edge, margin or precipitous bank forming the ordinary high-water mark of such watercourses.

Privies Adjacent to any Reservoir or Watercourse

1. No privy, privy vault, pit, cesspool or any other receptacle of any kind used for either the temporary storage or the permanent deposit of human

excreta, shall be constructed, placed, maintained or allowed to remain within 100 feet of any reservoir or watercourse tributary to the public water supply of the city of Beacon.

2. No privy, privy vault, pit, cesspool or any other receptacle used for the permanent deposit of human excreta shall be constructed, located, placed, maintained or allowed to remain within 300 feet of any reservoir or any watercourse tributary to the public water supply of the city of Beacon.

3. No cesspool, pit or other receptacle of any kind used for the temporary storage of human excreta or sewage shall be constructed, located, maintained or allowed to remain between the limiting distances prescribed by Rule 1 and the limiting distances prescribed by Rule 2, unless said cesspool, pit or other receptacle is so arranged and equipped that the said excreta or sewage are at once removed by pump or other satisfactory means through watertight pipes or conduits to some proper place of ultimate disposal, as hereinafter provided, or unless suitable removable vessels or receptacles for the temporary storage of said human excreta or sewage are provided and at all times maintained in an absolutely watertight condition and in such manner as to permit of convenient removal of said excreta or sewage to some place of ultimate disposal as hereinafter set forth.

4. The excreta collected in the aforesaid removable receptacles permitted under Rule 3 shall be removed and the receptacles thoroughly cleaned and deodorized as often as may be found necessary to maintain the privy in proper sanitary condition and to effectually prevent any overflow upon the soil or upon the foundation or floor of the privy. In effecting this removal the utmost care shall be exercised that none of the contents be allowed to escape while being transferred from the privy to the place of disposal, hereinafter specified, and that the contents while being transferred from the privy to the place of disposal, shall be thoroughly covered and that the least possible annoyance and inconvenience be caused to occupants of the premises and the adjacent premises.

5. Unless otherwise specifically ordered or permitted by the State Department of Health, the excreta collected in the aforesaid removable receptacles permitted under Rule 3 shall, when removed be disposed of by burying in trenches or pits at a depth of not less than 18 inches below the surface and at some point off the watersheds of the reservoirs and watercourses tributary to the public water supply of the city of Beacon.

6. Whenever, owing to the character of the soil or of the surface of the ground, or owing to the height or flow of subsoil or surface water, or other special local conditions it is considered by the State Commissioner of Health that excremental matter from any privy or aforesaid receptacle, or from any trench or place of disposal, or the garbage or wastes from any dump, may be washed over the surface or through the soil in an imperfectly purified condition into any reservoir or watercourse, then the said privy or receptacle for excreta, or the trench or place of disposal, or the said garbage or waste dump, shall, after due notice to the owner thereof, be removed to such greater distance or to such place as shall be considered safe and proper by the State Commissioner of Health.

Sewage, House Slops, Sink Waste, Etc.

7. No house slops, bath water, sewage or other excretal matter from any water closet, privy, cesspool or other sources, shall be thrown, placed, led, conducted, discharged or allowed to escape or flow in any manner either directly or indirectly into any reservoir or any watercourse tributary to the public water supply of the city of Beacon, nor shall any such matter be thrown, placed, led, discharged or allowed to escape beneath the surface except into watertight receptacles, the contents of which are to be removed, as provided by Rule 4, within 300 feet of any reservoir or watercourse tributary to the public water supply of the city of Beacon.

8. No garbage, putrescible matter, kitchen or sink wastes, refuse or waste matter from any creamery, cheese factory or laundry, nor water in which milk cans, utensils, clothing, bedding, carpets, or harness have been washed or rinsed, or any polluted water or liquid of any kind shall be thrown, or discharged directly or indirectly into any reservoir or watercourse, nor

shall any such liquid or solid refuse or waste be thrown, discharged or allowed to escape or remain upon the surface of the ground or to percolate into or through the ground below the surface in any manner whereby the same may flow into any reservoir or watercourse within a distance of 100 feet from any reservoir or watercourse tributary to the public water supply of the city of Beacon.

9. No clothing, bedding, carpets, harnesses, vehicle, receptacles, utensils, nor anything that pollutes water shall be washed, rinsed, or placed in any reservoir or watercourse.

Bathing, Animals, Manure, Compost, Etc.

10. No person shall be allowed to bathe in any reservoir nor shall any animals or poultry be allowed to stand, wallow, wade or swim in any reservoir, nor be washed therein. The watering of animals or poultry in any reservoir of the public water supply of the city of Beacon is prohibited. No watering place shall be maintained in such a way as to pollute with muddy leachings or excretal matters any streams tributary to the public water supply of the city of Beacon.

11. No stable for cattle or horses, barnyard, hogyard, pigpen, poultry house or yard, hitching place or standing place for horses or other animals, manure pile or compost heap, shall be constructed, placed, maintained or allowed to remain with its nearest point less than 100 feet from any reservoir or watercourse tributary to the public water supply of the city of Beacon, and none of the above-named objects or sources of pollution shall be so constructed, placed, maintained, or allowed to remain where or in such a manner that the drainings, leachings or washings from the same may enter any such reservoir or watercourse without first having passed over or through such an extent of soil as to have been properly purified, and in no case shall it be deemed that proper purification has been secured unless the above drainings, leachings or washings shall have percolated over or through the soil in a scattered dissipated form, and not concentrated in perceptible lines of drainage for a distance of not less than 100 feet from any reservoir or watercourse tributary to the public water supply of the city of Beacon.

12. No human excreta and no compost or other matter containing human excreta shall be thrown, placed or allowed to escape into any reservoir or watercourse, nor to be placed, piled or spread upon the surface of the ground at any point on the watershed tributary to the public water supply of the city of Beacon, nor shall such human excreta or compost or other matter containing human excreta be dug or buried in the soil at a less depth than 18 inches below the surface nor within a distance of 500 feet from any reservoir or watercourse tributary to the public water supply of the city of Beacon, and no manure or compost of any kind shall be placed, piled or spread upon the ground within a distance of 200 feet from any reservoir or watercourse tributary to the public water supply of the city of Beacon.

13. No decayed or fermented fruit or vegetables, cider mill wastes, roots, grain or other vegetable refuse of any kind shall be thrown, placed, discharged or allowed to escape or pass into any reservoir or watercourse, nor shall they be thrown, placed, piled, maintained or allowed to remain in such places that the drainings, leachings or washings therefrom may flow by open, blind or covered drains or channels of any kind into any reservoir or watercourse without first having passed over or through such an extent of soil as to have been properly purified, and in no case shall it be deemed that sufficient purification has been secured unless the above-mentioned drainings, leachings or washings shall have percolated over or through the soil in a scattered, dissipated form, and not concentrated in perceptible lines of drainage for a distance of not less than 75 feet before entering any reservoir or watercourse tributary to the public water supply of the city of Beacon.

Dead Animals, Offal, Manufacturing Wastes, Etc.

14. No dead animals, bird, fish or any part thereof nor any offal or waste matter of any kind, shall be thrown, placed, discharged or allowed to escape or to pass into any reservoir or watercourse. Nor shall any such material or refuse be so located, placed, maintained or allowed to remain that the drainage, leachings or washings therefrom may reach any such reservoir or watercourse without having first percolated over or through the soil in a scattered, dissipated form and not concentrated in perceptible lines of drainage, for a distance of 200 feet from any reservoir or watercourse tributary to the public water supply of the city of Beacon.

Fishing, Boating and Ice Cutting

15. No boating of any kind or fishing from boats or through the ice, and no ice cutting or any trespassing whatever shall be allowed in or upon the waters or ice of the reservoirs.

Labor Camps

16. No temporary camp, tent, building or other structures for housing laborers engaged on construction work or for other purposes shall be located, placed or maintained within a distance of 500 feet from any reservoir or 100 feet from any watercourse tributary to the public water supply of the city of Beacon.

Cemeteries

17. No interment of a human body shall be made within a distance of 300 feet from any reservoir or 100 feet from any watercourse tributary to the public water supply of the city of Beacon.

Inspections

18. The board of public works of the city of Beacon shall make regular and thorough inspection of the reservoirs, streams and drainage areas tributary thereto for the purpose of ascertaining whether the above rules and regulations are being complied with, and it shall be the duty of said board of public works to cause copies of any rules and regulations violated to be served upon the persons violating the same, with notices of such violations; and if such persons served do not immediately comply with the rules and regulations it shall be the further duty of the board of public works to promptly notify the State Commissioner of Health of such violations. The board of public works shall report in writing annually on the first day of January the results of the regular inspections made during the preceding year, stating the number of inspections which have been made, the number of violations found, the number of notices served, and the general condition of the watershed at the time of the last inspection.

Penalty

19. In accordance with section 70 of chapter 45 of the Consolidated Laws (Public Health Law) the penalty for each and every violation of, or noncompliance with, any of these rules and regulations which relate to a permanent source or act of contamination, is hereby fixed at $100.

The foregoing rules and regulations for the protection from contamination of the public water supply of the city of Beacon are hereby duly made, ordained and established on this 15th day of November, 1921, pursuant to chapter 45 of the Consolidated Laws (Public Health Law) of the State of New York, as finally amended, by chapter 510 of the Laws of 1921.

Albany, N. Y.

M. NICOLL, JR.,
Deputy State Commissioner of Health.

BROCTON

The rules and regulations hereinafter given, duly made and enacted in accordance with the provisions of sections 70, 71 and 73 of chapter 45 of the Consolidated Laws (Public Health Law) as heretofore set forth shall apply to all natural and artificial reservoirs on Slippery Rock creek and to all watercourses tributary thereto or ultimately discharging into said reservoirs, these bodies of water being sources of the public water supply of the village of Brocton, Chautauqua county, N. Y. The term "reservoir" wherever used in these rules is intended to mean and refer to all storage and impounding reservoirs on Slippery Rock creek, which are tributary to or which serve as sources of this public water supply or to any additional reservoir which may be constructed or used for the purpose of this public water supply. The term "watercourse" wherever used in these rules is intended to mean and include every spring, pond (other than the artificial reservoirs and filter basins) stream, ditch, gutter or other channel of any kind the waters of which when running whether continuously or occasionally eventually flow or may flow into the public water supply of the village of Brocton.

Wherever a linear distance of a structure or object from a reservoir or from a watercourse is mentioned in these rules it is intended to mean the shortest horizontal distance from the nearest point of the structure or object to the highwater mark of a reservoir or to the edge, margin or precipitous bank forming the ordinary highwater mark of such watercourse.

Privies Adjacent to Any Reservoir or Watercourse

1. No privy, privy vault, pit, cesspool or any other receptacle of any kind used for either the temporary storage or the permanent deposit of human excreta shall be constructed, placed, maintained or allowed to remain within 200 feet of any reservoir or within 75 feet of any watercourse tributary to the public water supply of Brocton.

2. No privy, privy vault, pit, cesspool or any other receptacle used for the permanent deposit of human excreta shall be constructed, located, placed, maintained or allowed to remain within 300 feet of any reservoir or within 100 feet of any watercourse tributary to the public water supply of Brocton.

3. No cesspool, pit or other receptacle of any kind used for the deposit or storage of human excreta or sewage shall be constructed, located, maintained or allowed to remain between the limiting distances prescribed by Rule 1 and the limiting distances prescribed by Rule 2 unless said cesspool, pit or other receptacle is so arranged and equipped that the said excreta or sewage are at once removed by pump or other satisfactory means through watertight pipes or conduits to some proper place of ultimate disposal, as hereinafter provided, or unless suitable removable vessels or receptacles for the temporary storage of said human excreta or sewage are provided and at all times maintained in an absolutely watertight condition and in such manner as to permit of convenient removal of said excreta or sewage to some place of ultimate disposal as hereinafter set forth.

4. The excreta collected in the aforesaid removable receptacles permitted under Rule 3 shall be removed and the receptacles thoroughly cleaned and deodorized as often as may be found necessary to maintain the privy in proper sanitary condition and to effectually prevent any overflow upon the soil or upon the foundation or floor of the privy. In effecting this removal the utmost care shall be exercised that none of the contents be allowed to escape while being transferred from the privy to the place of disposal hereinafter specified, and that the contents while being transferred from the privy to the place of disposal, shall be thoroughly covered and that the least possible annoyance and inconvenience be caused to occupants of the premises and the adjacent premises.

5. Unless otherwise specially ordered or permitted by the State Commissioner of Health, the excreta collected in the aforesaid removable receptacles permitted under Rule 3 shall, when removed be disposed of by burying in

trenches or pits at a depth of not less than 18 inches below the surface and at a distance not less than 500 feet from any reservoir or watercourse tributary to the public water supply of the village of Brocton, and in such a manner and at such a place as to effectively prevent its being washed over the surface of, or through the ground, in an imperfectly purified condition into any reservoir or watercourse tributary to the public water supply of the village of Brocton.

6. Whenever, owing to the character of the soil or of the surface of the ground, or to the height or flow of subsoil or surface water, or to other special local conditions it is considered by the State Commissioner of Health that excremental matter from any privy or aforesaid receptacle, or from any trench or place of disposal, or the garbage or wastes from any dump, may be washed over the surface or through the soil in an imperfectly purified condition into any reservoir or watercourse, then the said privy or receptacle for excreta, or the trench or place of disposal, or the said garbage or waste dump, shall be removed to such greater distance or to such place as shall be considered safe and proper by the State Commissioner of Health.

Sewage, House Slops, Sink Wastes, Etc.

7. No house slops, bath water, sewage or other excretal matter from any water closet, privy, cesspool or other source, except the purified effluent from a properly constructed sewage disposal plant approved by the State Commissioner of Health, as required by law, shall be' thrown, placed, led, conducted, discharged or allowed to escape or flow in any manner either directly or indirectly into any reservoir or any watercourse tributary to the public water supply of the village of Brocton, nor shall any such matters be thrown, placed, led, discharged or allowed to escape or flow on the surface of the ground, or into the ground beneath the surface except into watertight receptacles the contents of which are to be removed, as provided by Rule 4 within 300 feet of any reservoir or within 100 feet of any watercourse tributary to the public water supply of the village of Brockton.

8. No garbage, putrescible matter, kitchen or sink wastes, refuse or waste matter from any creamery, cheese factory or laundry, nor water in which milk cans, utensils, clothing, bedding, carpets, or harness have been washed or rinsed, nor any polluted water or liquid of any kind shall be thrown. or discharged directly or indirectly into any reservoir or watercourse, nor shall any such liquid or solid refuse or waste be thrown, discharged or allowed to escape, flow, or remain upon the surface of the ground or to percolate into or through the ground below the surface in any manner whereby the same may flow or percolate into any reservoir or watercourse within a distance of 200 feet from any reservoir or within 75 feet from any watercourse tributary to the public water supply of the village of Brocton.

9. No clothing, bedding, carpets, harnesses, vehicle, receptacles, utensils, nor anything that pollutes water, shall be washed, rinsed, or placed in any reservoir or watercourse tributary to the public water supply of the village of Brocton.

Bathing, Animals, Manure, Compost, Etc.

10. No person shall bathe nor shall any animal be allowed to stand, wallow, wade or swim, nor be washed, nor watered in any reservoir of the public water supply of the village of Brocton. No watering place shall be maintained in such a way as to pollute with muddy leachings or excretal matters any streams tributary to the public water supply of the village of Brocton.

11. No stable for cattle or horses, barnyards, hogyard, pigpen, poultry house or yard, hitching place or standing place for horses or other animals, manure pile or compost heap, shall be constructed, placed, maintained or allowed to remain with its nearest point less than 300 feet from any reservoir or within 75 feet of any watercourse tributary to the public water supply of the village of Brocton, and none of the above named objects or sources of pollution shall be so constructed, placed, maintained or allowed to remain where or in such a manner that the drainings, leachings or washings from

the same may enter any such reservoir or watercourse without first having passed over or through such an extent of soil as to have been properly purified, and in no case shall it be deemed that proper purification has been secured unless the above drainings, leachings or washings shall have percolated over or through the soil in a scattered dissipated form, and not concentrated in perceptible lines of drainage for a distance of not less than 300 feet to any reservoir or 50 feet to any watercourse tributary to the public water supply of the village of Brocton.

12. No human excreta and no compost or other matter containing human excreta shall be thrown, placed or allowed to escape into any reservoir or watercourse, nor to be placed, piled or spread upon the surface of the ground at any point on the watershed tributary to the public water supply of the village of Brocton, nor shall any such human excreta or compost or other matter containing human excreta be dug or buried in the soil at a less depth than 18 inches below the surface nor within a distance of 300 feet from any reservoir nor within 150 feet of any watercourse tributary to the public water supply of the village of Brocton, and no manure or compost of any kind shall be placed, piled, or spread upon the ground within a distance of 300 feet from any reservoir or within 50 feet from any watercourse tributary to the public water supply of Brocton.

13. No decayed or fermented fruit or vegetables, cider mill wastes, roots, grain or other vegetable refuse of any kind shall be thrown, placed, discharged or allowed to escape or pass into any reservoir or watercourse, nor shall they be thrown, placed, piled, maintained or allowed to remain in such places that the drainage, leachings or washings therefrom may flow by open, blind or covered drains or channels of any kind into any reservoir or watercourse without first having passed over or through such an extent of soil as to have been properly purified, and in no case shall it be deemed that sufficient purification has been secured unless the above mentioned drainings, leachings, or washings shall have percolated over or through the soil in a scattered, dissipated form, and not concentrated in perceptible lines of drainage for a distance of not less than 200 feet before entering any reservoir or 50 feet before entering any watercourse tributary to the public water supply of the village of Brocton.

Dead Animals, Offal, Manufacturing Wastes, Etc.

14. No dead animals, bird, fish or any part thereof nor any offal or waste matter of any kind, shall be thrown, placed, discharged or allowed to escape or to pass into any reservoir or watercourse. Nor shall any such material or refuse be so located, placed, maintained or allowed to remain that the drainage, leachings, or washings therefrom may reach any such reservoir or watercourse without having first percolated over or through the soil in a scattered dissipated form and not concentrated in perceptible lines of drainage, for a distance of 300 feet from any reservoir or 100 feet from any watercourse tributary to the public water supply of Brocton.

Fishing, Boating and Ice Cutting

15. No boating of any kind, or fishing from boats, or through the ice and no ice cutting or any trespassing whatever shall be allowed in or upon the waters or ice of the reservoir.

Labor Camps

16. No temporary camp, tent, building or other structures for housing laborers engaged on construction work or for other purposes shall be located, placed or maintained within a distance of 500 feet from any reservoir or 300 feet from any watercourse tributary to the public water supply of Brocton.

Cemeteries

17. No interment of a human body shall be made within a distance of 500 feet from any reservoir or 250 feet from any watercourse tributary to the public water supply of Brocton.

Inspections

18. The board of trustees of the village of Brocton or such other board, body, or person as may be charged with the maintenance of the public water supply of the village shall make or cause to be made regular and thorough inspections of the reservoirs, streams and drainage areas tributary thereto for the purpose of ascertaining whether the above rules and regulations are being complied with, and it shall be the duty of said board to cause copies of any rules and regulations violated to be served upon the persons violating the same with notices of such violations; and if such persons served do not immediately comply with the rules and regulations it shall be the further duty of the board of water commissioners to promptly notify the State Commissioner of Health of such violations. The board shall report in writing annually on the first day of January, the results of the regular inspections made during the preceding year stating the number of inspections which have been made, the number of violations found, the number of notices served, and the general condition of the watershed at the time of the last inspection.

Penalty

19. In accordance with section 70 of chapter 45 of the Consolidated Laws (Public Health Law), the penalty for each and every violation of or noncompliance with any of these rules and regulations which relate to a permanent source or act of contamination, is hereby fixed at $100.

The foregoing rules and regulations for the protection from contamination of the public water supply of Brocton are hereby duly made, ordained and established on this 23rd day of April, 1921, pursuant to chapter 45 of the Consolidated Laws (Public Health Law), of the State of New York, as finally amended by chapter 665 of the Laws of 1915.

M. NICOLL, JR.
ALBANY, N. Y. *Deputy Commissioner of Health*

CANTON

The rules and regulations hereinafter given, duly made and enacted in accordance with the provisions of sections 70, 71 and 73 of chapter 45 of the Consolidated Laws (Public Health Law), as heretofore set forth, shall apply to all natural and artificial reservoirs of the Barringer, Collar, Barrett, O'Brien, Allen, Matthews and Dinsdale springs and to all watercourses tributary thereto or ultimately discharging into said reservoirs, these bodies of water being sources of the public water supply of the village of Canton, St. Lawrence county, New York. The term "reservoir" wherever used in these rules is intended to mean and refers to all impounding and storage reservoirs used for the collection or storage of the flow from the above named springs which are tributary to or which serve as sources of this public water supply or to any additional reservoir which may be constructed or used for the purpose of this public water supply. The term "watercourse" wherever used in these rules is intended to mean and include every spring, pond (other than the artificial reservoirs and filter basins) stream, ditch, gutter or channel of any kind, the waters of which, when running whether continuously or occasionally, eventually flow or may flow into the public water supply of Canton.

Wherever a linear distance of a structure or object from a reservoir or from a watercourse is mentioned in these rules, it is intended to mean the shortest horizontal distance from the nearest point of the structure or object to the high-water mark of a reservoir or to the edge, margin or precipitous bank forming the ordinary high-water mark of such watercourse.

Privies Adjacent to any Reservoir or Watercourse

1. No privy, privy vault, pit, cesspool or receptacle of any kind used for either the temporary storage or the permanent deposit of human excreta shall be constructed, placed, maintained or allowed to remain within 200 feet of any reservoir or within 100 feet of any watercourse tributary to the public water supply of the village of Canton, N. Y.

2. No privy, privy vault, pit, cesspool or other receptacle used for the permanent deposit of human excreta shall be constructed, located, placed, maintained or allowed to remain within 300 feet of any reservoir or within 200 feet of any watercourse tributary to the public water supply of the village of Canton, N. Y.

3. No cesspool, pit or other receptacle used for the temporary storage of human excreta or sewage shall be constructed, located, maintained or allowed to remain between the limiting distances prescribed by Rule 1 and the limiting distances prescribed by Rule 2 unless said cesspool, pit or other receptacle is watertight and so arranged and equipped that the said excreta or sewage will not overflow and is at once removed by pump or other satisfactory means through watertight pipes or conduits to some proper place of ultimate disposal, as hereinafter provided; except that suitable removable vessels or receptacles for the temporary storage of said human excreta or sewage may be provided and maintained between the said limiting distances if at all times maintained in an absolutely watertight condition and in such manner as to permit of convenient removal of said excreta or sewage to some place of ultimate disposal as hereinafter set forth.

4. The excreta collected in the aforesaid removable vessels or receptacles permitted under Rule 3 shall be removed and vessels or receptacles thoroughly cleaned and deodorized as often as may be found necessary in order to maintain them or the privy or place in which they are kept in proper sanitary condition and to effectually prevent any overflow upon the soil or upon the foundation or floor of the privy or other place. In effecting this removal the utmost care shall be exercised that none of the contents be allowed to escape while being transferred from the privy or place of temporary storage to the place of final disposal hereinafter specified, and that the contents while being transferred shall be effectively covered and that the least possible annoyance and inconvenience be caused to occupants of the premises and the adjacent premises.

5. Unless otherwise specially ordered or permitted by the State Department of Health, the excreta collected in the aforesaid removable receptacle permitted under Rule 3 shall, when removed be disposed of by burying in trenches or pits at a depth of not less than 18 inches below the surface and at a distance not less than 500 feet from any reservoir or watercourse tributary to the public water supply of the village of Canton.

6. Whenever, owing to the character of the soil or of the surface of the ground, or owing to the height or flow of subsoil or surface water, or other special local conditions it is considered by the State Commissioner of Health that excremental matter from any privy or aforesaid receptacles or from any trench or place of disposal, or the garbage or wastes from any dump, may be washed over the surface or through the soil in an imperfectly purified condition into any reservoir or watercourse, then the said privy or receptacle for excreta, or the trench or place of disposal, or the said garbage or waste dump, shall, after due notice to the owner thereof, be removed to such greater distance or to such place as shall be considered safe and proper by the State Commissioner of Health.

Sewage, House Slops, Sink Wastes, Etc.

7. No house slops, bath water, sewage or other excretal matter from any water closet, privy, cesspool or other source, except the purified effluent from a properly constructed sewage disposal plant approved by the State Department of Health, as required by law, shall be thrown, placed, led conducted, discharged or allowed to escape or flow in any manner either directly or indirectly into any reservoir or any watercourse tributary to the public water

supply of Canton, nor shall any such matters be thrown, placed, led, discharged or allowed to escape on or beneath the surface of the ground, except into watertight receptacles, the contents of which are to be removed as provided by Rule 4, within 300 feet of any reservoir or within 200 feet of any watercourse tributary to the public water supply of the village of Canton.

8. No garbage, putrescible matter, kitchen or sink wastes, refuse or waste matter from any creamery, cheese factory or laundry, water in which milk cans, utensils, clothing, bedding, carpets or harness have been washed or rinsed, nor any polluted water or liquid of any kind shall be thrown or discharged directly or indirectly into any reservoir or watercourse; nor shall any such liquid or solid refuse or waste be thrown, discharged or allowed to escape or remain upon the surface of the ground, or be allowed to escape or percolate into or through the ground below the surface within a distance of 200 feet from any reservoir or within 100 feet from any watercourse tributary to the public water supply of Canton.

9. No clothing, bedding, carpets, harnesses, vehicle, receptacles, utensils, nor anything that pollutes water, shall be washed, rinsed or placed in any reservoir or watercourse.

Bathing, Animals, Manure, Compost, Etc.

10. No person shall be allowed to bathe in any reservoir or tributary thereof, nor shall any animals or poultry be allowed to stand, wallow, wade or swim in any reservoir or tributary thereof nor be washed therein. No animals or poultry shall be watered in any reservoir of the public water supply of the village of Canton. No watering place of any kind shall be maintained in such a way as to pollute with muddy leachings or excretal matters any streams tributary to the public water supply of the village of Canton.

11. No stable for cattle or horses, barnyard, hogyard, pigpen, poultry house or yard, hitching place or standing place for horses or other animals, manure pile or compost heap, shall be constructed, placed, maintained or allowed to remain with its nearest point less than 300 feet from any reservoir or within 200 feet of any watercourse tributary to the public water supply of Canton, and none of the above named objects or sources of pollution shall be so constructed, placed, maintained or allowed to remain where or in such a manner that the drainage, leachings or washings from the same may enter any such reservoir or watercourse without first having passed over or through such an extent of soil as to have been properly purified, and in no case shall it be deemed that proper purification has been secured unless the above drainings, leachings or washings shall have percolated over or through the soil in a scattered dissipated form, and not concentrated in perceptible lines of drainage for a distance of not less than 300 feet from any reservoir or 200 feet from any watercourse tributary to the public water supply of the village of Canton.

12. No human excreta and no compost or other matter containing human excreta shall be thrown, placed or allowed to escape into any reservoir or watercourse, nor to be placed, piled or spread upon the surface of the ground at any point on the watershed tributary to the public water supply of the village of Canton, nor shall such human excreta or compost or other matter containing human excreta be dug or buried in the soil at a less depth than 18 inches below the surface nor within a distance of 500 feet from any reservoir nor within 300 feet of any watercourse tributary to the public water supply of the village of Canton, and no manure or compost of any kind shall be placed, piled or spread upon the ground within a distance of 200 feet from any reservoir or within 100 feet from any watercourse or ditch tributary to the public water supply of the village of Canton.

13. No decayed or fermented fruit or vegetables, cider-mill wastes, roots, grain or other vegetable refuse of any kind shall be thrown, placed, discharged or allowed to escape or pass into any reservoir or watercourse, nor shall they be thrown, placed, piled, maintained or allowed to remain in such

places that the drainage, leachings or washings therefrom may flow by open, blind or covered drains or channels of any kind into any reservoir or watercourse without first having passed over or through such an extent of soil as to have been properly purified, and in no case shall it be deemed that sufficient purification has been secured unless the above mentioned drainings, leachings or washings shall have percolated over or through the soil in a scattered, dissipated form and not concentrated in perceptible lines of drainage for a distance of not less than 100 feet before entering any reservoir or watercourse tributary to the public water supply of the village of Canton.

Dead Animals, Offal, Manufacturing Wastes, Etc.

14. No dead animals, bird, fish or any part thereof nor any offal or waste matter of any kind, shall be thrown, placed, discharged or allowed to escape or to pass into any reservoir or watercourse. Nor shall any such material or refuse be so located, placed, maintained or allowed to remain that the drainage, leachings or washings therefrom may reach any such reservoir or watercourse without having first percolated over or through the soil in a scattered, dissipated form and not concentrated in perceptible lines of drainage, for a distance of 300 feet from any reservoir or 200 feet from any watercourse tributary to the public water supply of the village of Canton.

Fishing Boating and Ice Cutting

15. No boating or fishing of any kind, and no ice cutting or trespassing whatever shall be allowed in or upon the waters or ice of the reservoir.

Labor Camps

16. No temporary camp, tent, building or other structures for housing laborers engaged on construction work or for other purposes shall be located, placed or maintained within a distance of 500 feet from any reservoir or 300 feet from any watercourse tributary to the public water supply of the village of Canton.

Cemeteries

17. No interment of a human body shall be made within a distance of 500 feet from any reservoir or 300 feet from any watercourse tributary to the public water supply of the village of Canton.

Inspections

18. The board of water commissioners of the village of Canton shall make regular and thorough inspections of the reservoirs, streams and drainage areas tributary thereto for the purpose of ascertaining whether the above rules and regulations are being complied with, and it shall be the duty of said board of water commissioners to cause copies of any rules and regulations violated to be served upon the persons violating the same with notices of such violations; and if such persons served do not immediately comply with the rules and regulations it shall be the further duty of the board of water commissioners to promptly notify the State Commissioner of Health of such violations. The board of water commissioners shall report in writing annually, on the first day of January, the results of the regular inspections made during the preceding year, stating the number of inspections which have been made, the number of violations found, the number of notices served, and the general condition of the watershed at the time of the last inspection.

Penalty

19. In accordance with section 70 of chapter 45 of the Consolidated Laws (Public Health Law) the penalty for each and every violation of, or noncompliance with, any of these rules and regulations which relate to a permanent source or act of contamination, is hereby fixed at $100.

The foregoing rules and regulations for the protection from contamination of the public water supply of Canton are hereby duly made, ordained and established on this 11th day of April, 1921, pursuant to chapter 45 of the Consolidated Laws (Public Health Law) of the State of New York, as finally amended by chapter 665 of the Laws of 1915.

M. NICOLL, JR.,
Albany, N. Y. *Deputy Commissioner of Health.*

NEWARK

The rules and regulations hereinafter given, duly made and enacted in accordance with the provisions of sections 70, 71 and 73 of chapter 45 of the Consolidated Laws (Public Health Law), as heretofore set forth, shall apply to all natural and artificial reservoirs on Case creek and to all watercourses tributary thereto or ultimately discharging into said reservoirs, these bodies of water being sources of the public water supply of the village of Newark, Wayne county, N. Y. The term "reservoir," wherever used in these rules, is intended to mean and refer to all storage and impounding reservoirs on Case creek which are tributary to or which serve as sources of this public water supply or to any additional reservoir which may be constructed or used for the purpose of this public water supply. The term "watercourse," wherever used in these rules, is intended to mean and include every spring, pond (other than the artificial reservoirs and filter basins), stream, ditch, gutter or other channel of any kind, the waters of which when running, whether continuously or occasionally, eventually flow or may flow into the public water supply of the village of Newark.

Wherever a linear distance of a structure or object from a reservoir or from a watercourse is mentioned in these rules it is intended to mean the shortest horizontal distance from the nearest point of the structure or object to the highwater mark of a reservoir or to the edge, margin or precipitous bank forming the ordinary highwater mark of such watercourse.

Privies Adjacent to any Reservoir or Watercourse.

1. No privy, privy vault, pit, cesspool or any other receptacle of any kind used for either the temporary storage or the permanent deposit of human excreta shall be constructed, placed, maintained or allowed to remain within 200 feet of any reservoir or within 75 feet of any watercourse tributary to the public water supply of the village of Newark.

2. No privy, privy vault, pit, cesspool or any other receptacle used for the permanent deposit of human excreta shall be constructed, located, placed, maintained or allowed to remain within 300 feet of any reservoir or within 150 feet of any watercourse tributary to the public water supply of the village of Newark.

3. No cesspool pit or other receptacle of any kind used for the deposit or storage of human excreta or sewage shall be constructed, located, maintained or allowed to remain between the limiting distances prescribed by Rule 1 and the limiting distances prescribed by Rule 2, unless said cesspool, pit or other receptacle is so arranged and equipped that the said excreta or sewage are at once removed by pump or other satisfactory means through watertight pipes or conduits to some proper place of ultimate disposal, as hereinafter provided, or unless suitable removable vessels or receptacles for the temporary storage of said human excreta or sewage are provided and at all times maintained in an absolutely watertight condition and in such manner as to permit of convenient removal of said excreta or sewage to some place of ultimate disposal as hereinafter set forth.

4. The excreta collected in the aforesaid removable receptacles permitted under Rule 3 shall be removed and the receptacles thoroughly cleaned and deodorized as often as may be found necessary to maintain

the privy in proper sanitary condition and to effectually prevent any overflow upon the soil or upon the foundation or floor of the privy. In effecting this removal the utmost care shall be exercised that none of the contents be allowed to escape while being transferred from the privy to the place of disposal hereinafter specified, and that the contents, while being transferred from the privy to the place of disposal, shall be thoroughly covered and that the least possible annoyance and inconvenience be caused to occupants of the premises and the adjacent premises.

5. Unless otherwise specially ordered or permitted by the State Commissioner of Health, the excreta collected in the aforesaid removable receptacles permitted under Rule 3 shall, when removed, be disposed of by burying in trenches or pits at a depth of not less than 18 inches below the surface and at a distance of not less than 500 feet from any reservoir or watercourse tributary to the public water supply of the village of Newark and in such a manner and at such a place as to effectually prevent its being washed over the surface of or through the ground in an imperfectly purified condition into any reservoir or watercourse tributary to the public water supply of the village of Newark.

6. Whenever, owing to the character of the soil or of the surface of the ground, or to the height or flow of subsoil or surface water, or to other special local conditions it is considered by the State Commissioner of Health that excremental matter from any privy or aforesaid receptacle, or from any trench or place of disposal, or the garbage or wastes from any dump, may be washed over the surface or through the soil in an imperfectly purified condition into any reservoir or watercourse, then the said privy or receptacle for excreta, or the trench or place of disposal, or the said garbage or waste dump, shall, after due notice to the owner thereof, be removed to such greater distance or to such place as shall be considered safe and proper by the State Commissioner of Health.

Sewage, House Slops, Sink Wastes, Etc.

7. No house slops, bath water, sewage or other excretal matter from any water closet, privy, cesspool or other source, except the purified effluent from a properly constructed sewage disposal plant approved by the State Commissioner of Health, as required by law, shall be thrown, placed, led, conducted, discharged or allowed to escape or flow in any manner either directly or indirectly into any reservoir or any watercourse tributary to the public water supply of the village of Newark, nor shall any such matters be thrown, placed, led, discharged or allowed to escape or flow on the surface of the ground or into the ground beneath the surface, except into watertight receptacles, the contents of which are to be removed, as provided by Rule 4, within 300 feet of any reservoir or within 150 feet of any watercourse tributary to the public water supply of the village of Newark.

8. No garbage, putrescible matter, kitchen or sink wastes, refuse or waste matter from any creamery, cheese factory or laundry, nor water in which milk cans, utensils, clothing, bedding, carpets or harness have been washed or rinsed, nor any polluted water or liquid of any kind shall be thrown, or discharged directly or indirectly into any reservoir or watercourse, nor shall any such liquid or solid refuse or waste be thrown, discharged or allowed to escape, flow or remain upon the surface of the ground or to percolate into or through the ground below the surface in any manner whereby the same may flow or percolate into any reservoir or watercourse within a distance of 200 feet from any reservoir or within 75 feet from any watercourse tributary to the public water supply of the village of Newark.

9. No clothing, bedding, carpets, harness, vehicle, receptacles, utensils, nor anything that pollutes water shall be washed, rinsed or placed in any reservoir or watercourse tributary to the public water supply of the village of Newark.

Bathing, Animals, Manure, Compost, Etc.

10. No person shall bathe nor shall any animal be allowed to stand, wallow wade or swim, nor be washed or watered in any reservoir of the public water supply of the village of Newark. No watering place shall be maintained in such a way as to pollute with muddy leachings or excretal matters any streams tributary to the public water supply of the village of Newark.

11. No stable for cattle or horses, barnyards, hogyard, pigpen, poultry house or yard, hitching place or standing place for horses or other animals, manure pile or compost heap, shall be constructed, placed, maintained or allowed to remain with its nearest point less than 300 feet from any reservoir or within 75 feet of any watercourse tributary to the public water supply of the village of Newark, and none of the above-named objects or sources of pollution shall be so constructed, placed, maintained or allowed to remain where or in such a manner that the drainings, leachings or washings from the same may enter any such reservoir or watercourse without first having passed over or through such an extent of soil as to have been properly purified, and in no case shall it be deemed that proper purification has been secured unless the above drainings, leachings or washings shall have percolated over or through the soil in a scattered, dissipated form, and not concentrated in perceptible lines of drainage for a distance of not less than 300 feet to any reservoir or 75 feet to any watercourse tributary to the public water supply of the village of Newark.

12. No human excreta and no compost or other matter containing human excreta shall be thrown, placed or allowed to escape into any reservoir or watercourse, nor to be placed, piled or spread upon the surface of the ground at any point on the watershed tributary to the public water supply of the village of Newark, nor shall such human excreta or compost or other matter containing human excreta be dug or buried in the soil at a less depth than 18 inches below the surface nor within a distance of 300 feet from any reservoir nor within 150 feet of any watercourse tributary to the public water supply of the village of Newark, and no manure or compost of any kind shall be placed, piled or spread upon the ground within a distance of 300 feet from any reservoir or within 150 feet from any watercourse tributary to the public water supply of the village of Newark.

13. No decayed or fermented fruit or vegetables, cider-mill wastes, roots, grain or other vegetable refuse of any kind shall be thrown, placed, discharged or allowed to escape or pass into any reservoir or watercourse, nor shall they be thrown, placed, piled, maintained or allowed to remain in such places that the drainage, leachings or washings therefrom may flow by open, blind or covered drains or channels of any kind into any reservoir or watercourse without first having passed over or through such an extent of soil as to have been properly purified, and in no case shall it be deemed that sufficient purification has been secured unless the above mentioned drainings, leachings or washings shall have percolated over or through the soil in a scattered, dissipated form, and not concentrated in perceptible lines of drainage for a distance of not less than 200 feet before entering any reservoir or 50 feet before entering any watercourse tributary to the public water supply of the village of Newark.

Dead Animals, Offal, Manufacturing Wastes, Etc.

14. No dead animals, bird, fish or any part thereof nor any offal or waste matter of any kind, shall be thrown, placed, discharged or allowed to escape or to pass into any reservoir or watercourse. Nor shall any such material or refuse be so located, placed, maintained or allowed to remain that the drainage, leachings or washings therefrom may reach any such reservoir or watercourse without having first percolated over or through the soil in a scattered, dissipated form and not concentrated in perceptible lines of drainage, for a distance of 300 feet from any reservoir or 75 feet from any watercourse tributary to the public water supply of the village of Newark.

Fishing, Boating and Ice Cutting

15. No boating of any kind, or fishing from boats, or through the ice, and no ice cutting or any trespassing whatever shall be allowed in or upon the waters or ice of the reservoir.

Labor Camps

16. No temporary camp, tent, building or other structures for housing laborers engaged on construction work or for other purposes shall be located, placed or maintained within a distance of 500 feet from any reservoir or 300 feet from any watercourse tributary to the public water supply of the village of Newark.

Cemeteries

17. No interment of a human body shall be made within a distance of 500 feet from any reservoir or 250 feet from any watercourse tributary to the public water supply of the village of Newark.

Inspection

18. The municipal board of the village of Newark or such other board, body or person as may be charged with the maintenance of the public water supply of the village, shall make or cause to be made regular and thorough inspections of the reservoirs, streams and drainage areas tributary thereto for the purpose of ascertaining whether the above rules and regulations are being complied with, and it shall be the duty of said board to cause copies of any rules and regulations violated to be served upon the persons violating the same with notices of such violations; and if such persons served do not immediately comply with the rules and regulations it shall be the further duty of the board of water commissioners to promptly notify the State Commissioner of Health of such violations. The board shall report in writing annually on the first day of January the results of the regular inspections made during the preceding year, stating the number of inspections which have been made, the number of violations found, the number of notices served, and the general condition of the watershed at the time of the last inspection.

Penalty

19. In accordance with section 70 of Chapter 45 of the Consolidated Laws (Public Health Law), the penalty for each and every violation of or noncompliance with any of these rules and regulations which relate to a permanent source or act of contamination, is hereby fixed at $100.

The foregoing rules and regulations for the protection from contamination of the public water supply of the village of Newark are hereby duly made, ordained and established on this thirteenth day of June, 1921, pursuant to chapter 45 of the Consolidated Laws (Public Health Law) of the State of New York, as finally amended by chapter 665 of the Laws of 1915.

M. NICOLL, JR.
ALBANY, N. Y. *Deputy Commissioner of Health*

NUNDA

The rules and regulations hereinafter given, duly made and enacted in accordance with the provisions of sections 70, 71 and 73 of Chapter 45 of the Consolidated Laws (Public Health Law), as heretofore set forth, shall apply to all springs, natural and artificial reservoirs and to all watercourses tributary to the public water supply of the village of Nunda, Livingston county, N. Y. The term "reservoir" wherever used is intended to mean and refer to the impounding and storage reservoirs used for the collection or storage of the flow from the Bradley and Seager springs or other watercourses tributary to the public water supply of the village of Nunda or to any other additional reservoir which may be constructed or used for the purpose of this public water supply. The term " watercourse " wherever used in these rules is intended to mean and include every spring, pond, stream, ditch, gutter or channel of any kind, the waters of which when running, whether continuously or occasionally, eventually flow or may flow into the public water supply of the village of Nunda.

Wherever a linear distance of a structure or object from a reservoir or from a watercourse is mentioned in these rules it is intended to mean the shortest horizontal distance from the nearest point of the structure or object to the high-water mark of a reservoir or to the edge, margin or precipitous bank forming the ordinary high-water mark of such watercourse.

Privies Adjacent to Any Reservoir or Watercourse

1. No privy, privy vault. pit, cesspool or receptacle of any kind used for either the temporary storage or the permanent deposit of human excreta shall be constructed, placed, maintained or allowed to remain within 300 feet of any reservoir or watercourse tributary directly or indirectly to the public water supply of the village of Nunda, N. Y.

Sewage, House Slops, Sink Wastes, Etc.

2. No house slops, bath water, sewage or other excretal matter from any water closet, privy, cesspool or other sources, shall be thrown, placed, led, conducted, discharged or allowed to escape or flow in any manner either directly or indirectly into any reservoir or any watercourse tributary to the public water supply of the village of Nunda, nor shall any such matters be thrown, placed, led, discharged or allowed to escape on or beneath the surface of the ground within 300 feet of any reservoir or watercourse tributary directly or indirectly to the public water supply of the village of Nunda.

3. No garage, putrescible matter, kitchen or sink wastes, refuse or waste matter from any creamery, cheese factory or laundry, water in which milk cans, utensils, clothing, bedding, carpets or harness have been washed or rinsed, nor any polluted water or liquid of any kind shall be thrown or discharged directly or indirectly into any reservoir or watercourse, nor shall any such liquid or solid refuse or waste be thrown, discharged or allowed to escape or remain upon the surface of the ground, or be allowed to escape or percolate into, or through the ground below the surface within a distance of 300 feet from any reservoir or watercourse tributary directly or indirectly to the public water supply of the village of Nunda.

4. No clothing, bedding, carpets, harnesses, vehicles, receptacles, utensils, nor anything that pollutes water, shall be washed, rinsed or placed in any reservoir or watercourse, tributary directly or indirectly to the water supply of the village of Nunda.

Bathing, Animals, Manure, Compost, Etc.

5. No person shall be allowed to bathe in any reservoir or tributary thereof nor shall any animals or poultry be allowed to stand, wallow, wade or swim in any reservoir or tributary thereof nor be washed therein. No animals or poultry shall be watered in any reservoir of the public water supply of the village of Nunda. No watering place of any kind shall be maintained in such a way as to pollute with muddy leachings or excretal matters any streams tributary to the public water supply of the village of Nunda.

6. No stable for cattle or horses, barnyard, hogyard, pigpen, poultry house or yard, hitching place or standing place for horses or other animals, manure pile or compost heap, shall be constructed, placed, maintained or allowed to remain with its nearest point less than 300 feet from any reservoir or watercourse tributary to the public water supply of Nunda.

7. No human excreta and no compost or other matter containing human excreta shall be thrown, placed or allowed to escape into any reservoir or watercourse, nor to be placed, piled or spread upon the surface of the ground

at any point on the watershed tributary to the public water supply of the village of Nunda, nor shall such human excreta or compost or other matter containing human excreta be dug or buried in the soil at a less depth than 18 inches below the surface nor within a distance of 500 feet from any reservoir or watercourse tributary to the public water supply of the village of Nunda and no manure or compost of any kind shall be placed, piled or spread upon the ground within a distance of 200 feet from any reservoir or watercourse or ditch tributary to the public water supply of the village of Nunda.

8. No decayed or fermented fruit or vegetables, cider mill wastes, roots, grain or other vegetable refuse of any kind shall be thrown, placed, discharged or allowed to escape or pass into any reservoir or watercourse, nor shall they be thrown, placed, piled, maintained or allowed to remain in such places that the drainage, leachings or washings therefrom may flow by open, blind or covered drains or channels of any kind into any reservoir or watercourse tributary to the water supply of the village of Nunda.

Dead Animals, Offal, Manufacturing Wastes, Etc.

9. No dead animals, bird, fish or any part thereof nor any offal or waste matter of any kind, shall be thrown, placed, discharged or allowed to escape or to pass into any reservoir or watercourse. Nor shall any such material or refuse be so located, placed, maintained or allowed to remain that the drainage, leachings or washings therefrom may reach any such reservoir or watercourse without having first percolated over or through the soil in a scattered, dissipated form and not concentrated in perceptible lines of drainage, for a distance of 300 feet from any reservoir or watercourse tributary to the public water supply of the village of Nunda.

Fishing, Boating and Ice Cutting

10. No boating or fishing of any kind, and no ice cutting or trespassing whatever shall be allowed in or upon the waters or ice of the reservoir.

Labor Camps

11. No temporary camp, tent, building or other structure for housing laborers engaged on construction work or for other purposes shall be located, placed or maintained within a distance of 500 feet from any reservoir or watercourse tributary to the public water supply of the village of Nunda.

Cemeteries

12. No interment of a human body shall be made within a distance of 500 feet from any reservoir or watercourse tributary to the public water supply of the village of Nunda.

Inspections

13. The board of water commissioners of the village of Nunda shall make regular and thorough inspections of the reservoirs, streams and drainage areas tributary thereto for the purpose of ascertaining whether the above rules and regulations are being complied with, and it shall be the duty of said board of water commissioners to cause copies of any rules and regulations violated to be served upon the persons violating the same with notices of such violations; and if such persons served do not immediately comply with the rules and regulations it shall be the further duty of the board of water commissioners to promptly notify the State Commissioner of Health of such violations. The Board of Water Commissioners shall report in writing annually on the first day of January, the results of the regular inspections made during the preceding year stating the number of inspections which have been made, the number of violations found, the number of notices served, and the general condition of the watershed at the time of the last inspection.

Penalty

14. In accordance with section 70 of chapter 45 of the Consolidated Laws (Public Health Law), the penalty for each and every violation of, or noncompliance with, any of these rules and regulations which relate to a permanent source or act of contamination, is hereby fixed at $100.

The foregoing rules and regulations for the protection from contamination of the public water supply of Nunda are hereby duly made, ordained and established on this 16th day of February, 1921, pursuant to chapter 45 of the Consolidated Laws (Public Health Law) of the State of New York, as finally amended, by chapter 665 of the Laws of 1915.

M. NICOLL, JR.
ALBANY, N. Y. *Deputy Commissioner of Health*

INSPECTIONS OF VIOLATIONS OF RULES FOR THE PROTECTION OF PUBLIC WATER SUPPLIES

During 1921 inspections of violations of rules and regulations were made and the necessary orders to the local boards of health issued in connection with the water supplies of the following municipalities: Cornell University, Kingston, New Rochelle and Stamford.

REPORTS FROM BOARDS OF WATER COMMISSIONERS AND WATER COMPANIES ON THE ENFORCEMENT OF RULES AND REGULATIONS FOR THE PROTECTION FROM CONTAMINATION OF PUBLIC WATER SUPPLIES

In December, 1921, a form letter was addressed to all the boards of water commissioners and water companies having charge of the public water supplies for which rules and regulations have been enacted by this department, calling their attention to the provisions of the Public Health Law requiring an annual report in writing on the first day of January of each year, giving the detailed results of the regular inspections of the sources, the steps taken to abate any violations found and a general description of the conditions existing on the watershed.

Such letters were transmitted to eighty-nine municipalities and replies were received from eighty-three of these municipalities. No word was received from the remaining six municipalities although letters were later sent to the officials calling their attention to this requirement.

INVESTIGATIONS OF PUBLIC WATER SUPPLIES

There are nearly 550 public water supplies in New York State, all of which have been investigated by this department in connection with the general policy of supervising the sanitary quality of the public water supplies throughout the state.

During the year 1921, investigations of some 204 public water supplies were made. The majority of these investigations were made either as a result of requests for advice or assistance from the local authorities or in connection with arrangement with the surgeon-general whereby this department agreed to furnish him yearly data as to the sanitary quality of the public water supplies used for drinking and culinary purposes by common carriers in interstate traffic.

These investigations include detailed field inspections of the watersheds and water purification plants, if any; the collection of samples of water for chemical and bacterial analyses; the collection of data regarding yield, water consumption, distribution systems, etc. Reports on these investigations are then prepared in the office. In these reports the water supplies are described, the results of analyses of the water discussed and interpreted and recommendations for improvements to the supplies are made.

AFTON

A reinspection of the public water supply of the village of Afton, Chenango county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on February 24, 1921. A previous inspection of this supply was made by this Division in the year 1916 and a report thereon published in the Annual Report of the Department for that year.

Afton is located about 25 miles northeast of Binghamton. The present population is estimated at 874 and all are served with the water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners, of which Mr. Martin Swart is president. There are two private sewers located in the village which discharge their contents in the Susquehanna river. Most of the residences are provided with privies, amounting to approximately 70 per cent, whereas the remaining 30 per cent are provided with cesspools and a few septic tanks.

The water supply is derived from springs located in Broome county over four miles south of the village. From the springs the water flows by gravity to the village. The springs are located in a small frame house and an area of about one acre around the springs is fenced to prevent trespassing. There are no houses above nor within one mile of the springs.

The results of the analyses of the samples of water collected from the village supply indicated that the water was of a fairly satisfactory sanitary quality at the time of the inspection.

It was recommended in a report dated March 12, 1921, that the authorities in charge of the water supply continue to maintain their careful supervision over the supply and post signs on the watershed to warn trespassers against wilful or accidental contamination of the supply.

ALEXANDRIA BAY

A reinspection of the public water supply of the village of Alexandria Bay was made by a representative of this Division on September 22, 1921. Previous inspections of this supply have been made in 1911, 1914, 1918 and 1919 and the reports thereon published in the Annual Reports of this Department.

Alexandria Bay has a population estimated at 1,850 in winter and 5,000, at times, in summer. It is located in the northwestern part of Jefferson county, on the St. Lawrence river in a central portion of the Thousand Island district between Clayton and Ogdensburg. Practically all of the population are served with the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners for which Mr. A. R. DeYoung is superintendent.

The water supply is obtained by pumping from the St. Lawrence river, through an intake pipe extending some 650 feet from shore in about 70 feet of water. The sewage from the village of Clayton, 14 miles above, is discharged directly into the river. The sewers of the houses on the numerous islands in the river above the intake and the toilet pipes from the river steamers also constitute sources of local pollution.

This Department has repeatedly recommended that measures be taken to purify the water supply and that the water be treated at all times with liquid chlorine in amounts sufficient to secure adequate sterilization. From the recent inspection it appears that the recommendations of this Department have not been acted upon.

In a report dated October 5, 1921, it was pointed out:

1. That while the need for carrying out the previous recommendations of this Department still remains, the authorities in charge of the water supply have carried out these recommendations only in part.
2. That raw St. Lawrence river water is not safe for domestic use at all times and its use is dangerous to the health of residents and visitors.

It was, therefore, recommended that the former recommendations of this Department be carried out and an apparatus for the adequate sterilization of water by chlorine be installed at once.

ALFRED

A reinspection of the public water supply of Alfred, Allegany county, was made by Mr. W. C. Emigh, an assistant engineer in this Department, on October 22, 1920. A previous investigation of the supply was made by this Department in 1916, a report of which is to be found on page 225 of the 38th Annual Report of the State Department of Health.

Alfred is an incorporated village having a population estimated to be about 700 persons. It is located in the eastern central part of Allegany county. Alfred University, which includes a State School of Agriculture, is located near the center of the village. A student population of about 350 increases the total population to approximately 1,050. There is no public sewer system in Alfred but in addition to numerous private cesspools serving 1 or 2 houses each, a private sewer and settling tank receive the sewage from the university and from 10 or more houses.

The water supply is owned by the village and is under the control of the board of trustees, of which Mr. Raymond Reynolds is president. Previous to 1917 the supply was obtained from two drilled wells about 190 feet and 180 feet in depth, respectively, and 2 springs, all of which are located about 2 miles west of the village. About 1916 a third well was drilled in the southwestern part of the village. The older wells are located about 100 feet apart and 50 feet from a public highway. The privy of the only house in the vicinity is about 400 feet distant from the nearer well.

The water from the deeper well is pumped by a 6-horsepower air cooled Gade natural gas engine, belt connected to a McEwan well jack. This pumping equipment is housed in a rough frame structure. No floor is provided within the building. The well tubing or casing extends about 1 foot above the surface of the ground. Although this tubing, which is 6 inches in diameter, is closed at the top, it is possible for oil to drip from the jack into the well. It appears that a possibility exists of pollution reaching the water supply by following the well casing to its extremity near the rock surface at a depth thought to be about 130 feet. The cylinder of the jack is about 12 feet above the bottom of the well. The jack used at present is badly worn and it was stated that an order had been placed for a new one.

The shallower of the wells is located in ground, the surface of which is slightly lower than that near the deeper well. In December, 1919, the pump house at this well was destroyed by fire. Such machinery as was not destroyed by the fire has been removed but the pump house has not been rebuilt. The pump house was provided with a concrete floor. It is stated that the village authorities are considering the construction of a new pump house in which would be installed a prime mover supplying the power for pumping the water from both wells. The pumps would then be operated by a line shaft or cable.

One spring is located on the side of a hill about 200 feet from the last described well. The village owns the land upon which this spring is located and extending up the hill a distance of about 40 feet. Above this line the land, which has a steep slope, is used for agricultural purposes. It appears that in the process of cultivation manure is drawn upon it and that opportunity for pollution from this source is thereby afforded.

The second spring is located nearby on a property line separating 2 pastures and at a distance of about ¼ mile from the wells. On the lower side the land is of a swampy character. There is no fence around the area in which the spring is located and cattle pastured in the field have access to its immediate vicinity. It could not be learned that the village owns any land near the spring.

Both springs are said to be in soil composed largely of clay. At times when the ground is saturated the entire water supply is turbid. There can be little doubt that the turbidity is due to water entering the mains from the springs and that surface wash may reach them readily.

The third well, which was placed in operation in 1917, is located on a steep hillside southwest of the village and at a distance of about 20 feet from the reservoir which receives the surplus water from the mains. It is 8 inches in diameter and 305 feet deep, all but 20 feet of which depth is in shale rock. Water is pumped from the well by air lift and flows by gravity into the reservoir. The pumping equipment consists of a 20-horsepower Lozier gas engine which drives an Ingersoll-Rand 8-inch by 8-inch compound compressor. The power house, which is a frame structure, is located on Reynolds street, convenient to the built-up portion of the village. A 1¼-inch air line extends to the well, and a 3-inch discharge line leads from the well to the nearby reservoir. The superintendent of waterworks stated that 60 pounds of air pressure is required to start pumping but that 30 pounds is then sufficient. The well is covered by a concrete slab and no means of access to the piping connections is provided.

Our engineer was informed that the village authorities have considered the drilling of additional wells near the reservoir and the abandonment of the wells and springs more distantly located with respect to the village. Such a plan presents the advantage of including only one power plant which may be located within the village whereas formerly 3 widely separated plants have been in use, two of which were at a distance of 2 miles from the center of the village and difficult of approach at times.

It was, therefore, recommended in a report dated January 29, 1921:

1. That the municipal authorities in charge of the water supply carry out at once our previous recommendation that a substantial wire fence be constructed around the area surrounding the springs and that this area be protected from surface wash by suitable and adequate drainage ditches or abandon the springs as a source of supply.
2. That a concrete floor or platform be constructed around the well from which water was being pumped by means of a well jack at the time of the inspection.
3. That a new pump house be constructed to house the machinery used in pumping from one or both wells located west of the village.
4. That the village authorities consider the development of one or more additional wells suitably located to be pumped from a central power plant, situated conveniently with respect to the village.

AMAGANSETT

An inspection of the water supply used by the Long Island Railroad in the unincorporated village of Amagansett, Suffolk county, N. Y., was made by Mr. Alfred Mullikin of this Division on August 8, 1921.

Amagansett is a village with a population estimated at 700 and is located in the town of Easthampton on the Montauk Branch of the Long Island Railroad, 105 miles east of New York city. The village is not provided with a public water supply, although 4 of its houses obtain water from the railroad water supply. The railroad waterworks are owned and operated by the Long Island Railroad under the direction of Mr. G. C. Bishop, Superintendent of Motive Power at Morris Park, and Mr. George Oswald, at Jamaica. The railroad water supply is derived from a 4-inch driven well located on the north side of the railroad track about 300 feet west of the railroad station. The well and the pump are located inside of a metal house 15 by 22 feet in plan provided with a brick floor. The well is 100 feet deep and has a 4-inch casing, the top of which is sealed. The strata through which the well passes consist of sand and gravel. The ground water level, which is normally 60 feet below the surface of the ground, is, during the hours of pumping, lowered an additional 10 feet.

From the well the water is delivered by pumping into a wooden water tank having a capacity of about 30,000 gallons. From the tank the water flows by gravity to a water column on the south side of the tracks and also through about 375 feet of 5-inch pipe and 200 feet of one-inch pipe to 4 village houses, one of which is occupied by an employee of the railroad company. Of the 5 service taps, one is metered. The average daily water consumption is approximately 60,000 gallons.

The water is used principally by the railroad to supply water for the engines and also for drinking and culinary purposes on the railroad coaches. The water supply is used for drinking purposes by the employees at the station. While the well is located on railroad property, the area around the well is not fenced to prevent persons or animals coming in the vicinity of the well and causing any possible pollution of the ground around the well. There are, however, no houses located within a distance of 400 feet of the supply. As far as known, the village is not provided with a sewerage system and disposes of its sewage by means of privies and cesspools.

It was, therefore, recommended in a report dated August 22, 1921:

1. That the railroad authorities maintain careful supervision over the supply at all times by:
   (a) Making frequent inspections of the area within a distance of 500 feet from the well to detect, and eliminate if possible, all sources of pollution which may exist.

(b) Enclosing an area at least 20 feet square around the well to prevent persons or animals from having access to the vicinity of the well and causing any pollution of the ground around the well.

(c) Constructing drainage ditches around the well to divert surface wash from the vicinity of the well.

AMSTERDAM (Typhoid Fever)

An investigation was made and data collected on the recent occurrence of typhoid fever in the city of Amsterdam, N. Y., by Mr. Earl Devendorf, assistant engineer of this Department, on November 17, 23, 28 and 30, and December 21, 1920.

Amsterdam has a population of 36,000 inhabitants and is located in the eastern part of Montgomery county. The Public water supply is derived from Hans creek on which several large storage reservoirs are constructed. As developed the public water supply is of a fairly satisfactory sanitary quality but, as is true of all surface supplies, is subject to accidental, incidental or wilful contamination by hunters, fishermen, lumbermen and other chance visitors upon the watershed.

Twenty-two cases of typhoid fever occurred, having dates of onset subsequent to October 6, 1920. The data relative to these cases will be found in Table No. 1 appended to the report. From this table it will be seen that practically all those who contracted the disease were employees of the McCleary, Wallin and Crouse carpet mill, all but three of the cases given being employed in the mill. An investigation made indicated that the cases occurred among those employees being supplied with, or having access to, the drinking water from one supply line.

Appended Table No. 2 shows the number of cases of typhoid fever grouped relative to ages in 10-year periods. This table shows that the cases were fairly well distributed according to ages among the adults but that no children had been ill with typhoid fever.

Appended Table No. 3 shows the number of cases of typhoid fever occurring on each milk route and the quantity of milk delivered by the principal dealers in the city. From this table it will be seen that the cases occurring on the various milk routes have been distributed approximately in proportion to the quantity of milk supplied by the various dealers and that no dealer has an extra large amount of cases occurring along his route.

Appended Table No. 4 shows the number of employees and the number of cases of typhoid fever occurring in the various departments of the McCleary, Wallin and Crouse mill.

A very pertinent fact in this respect is that the drinking water in these departments is supplied from one line.

On the afternoon of November 18, 1920, the engineer, in company with Mr. George Wolff, mechanic in the mill, made a detailed inspection of the piping system at the mill and the existence of a cross-connection between the drinking water line and a creek water line used for industrial purposes was discovered. This cross-connection consisted of a 2-inch globe valve and a 2-inch check valve. At the time of the inspection the globe valve was open. The engineer was later informed that the city pressure was usually higher at this point and that it was the practice to open the globe valve at times in order to use the higher city pressure to operate a hydraulic press which was connected to the creek water line. Between the meter located under the floor in the basement of building No. 1 and the check valve separating the creek water line from the city water line, a 1-inch feed main is taken off the city water pipe line and supplies the drinking water for the departments named above.

In view of the fact that the city water is available from mains used to supply the sprinkler system which are not connected to any drinking water foundations or taps throughout the plant, the engineer advised the authorities in charge of the mill to disconnect the creek water line from the city water line at the point where the drinking water line enters under the basement of building No. 1. This, the engineer was later informed, was done in the afternoon of Nov. 18, 1920. It was thought advisable to have this done as experience has shown that a single check and gate valve, similar to the above described installation, is not entirely reliable and has been known to fail on repeated occasions.

As a result of the above matter being brought to the attention of this Department, a letter was transmitted to the commissioner of public works of the city of Amsterdam, in which it was pointed out that a cross-connection between the city mains and any auxiliary fire main provided with water derived from polluted sources constitutes a potential source of danger. The Commissioner was, therefore, asked to have a survey made among the various mills in the city in order to determine the type of cross-connections which exists between the city mains and the private auxiliary fire supplies and to prohibit such cross-connections unless they are provided with double check valves, a blue print of which was furnished the Commissioner.

In a report upon the typhoid outbreak dated January 3, 1921, the following conclusions were drawn:

1. That a large number of typhoid fever cases occurred during the months of October and November, 1920, in the city of Amsterdam among the employees of the McCleary, Wallin and Crouse mill.
2. That the cases in the mill have been confined to those employees served by or having access to a drinking water line which was, previous to November 18, 1920, cross-connected to a pipe water line conveying polluted creek water and protected from the entrance of the polluted water by only a single globe and check valve and that on certain occasions it had been the practice to open the globe valve in order to take advantage of the higher city pressure to operate a hydraulic press.
3. That the history of the cases occurring in the mill seems to indicate that the probable cause of the outbreak was the failure of the check valve to operate properly, which allowed polluted creek water to enter the drinking water line at this point and that this appears to be confirmed by the results of analyses of samples of water collected from the taps in the mill.
4. That this cross-connection was removed on November 18, 1920, and that no further cases of typhoid fever have occurred among the employees of the McCleary, Wallin and Crouse mill since November 27, 1920, and at this date it seems probable that no further cases will occur from this source of infection.
5. That the various mills around the city having auxiliary fire systems connected to the city mains have been notified to either disconnect these systems or properly install double check valves between the city mains and their auxiliary fire systems.

It was, therefore, recommended:

1. That the authorities in charge of the public water supply carry out the former recommendations of this Department by immediately installing a chlorination plant to sterilize their public water supply.
2. That all cross-connections between the city mains and any auxiliary fire system be served if practicable and if not practicable at present be provided with double check and gate valves arranged in a concrete or brick manhole and provided with suitable gauges and drains arranged in accordance with the plans approved by this Department.

TABLE No. 1

RECORD OF CASES

No.	NAME AND ADDRESS	Age	Where employed	Milk	Onset	Report
1	John Cincotti, 184 East Main st.	18	*Chenille dept	Nadler Bros.	10/19	10/26
2	Christopher Hill, 108 Grove st	40	*Mechanic	Krutz	10/ 6	11/12
3	Clyde Black, 31 Third st.	17	*Chenille dept	Sager	11/ 2	11/16
4	Wm. Redpatn, 235 Locust av	53	*Chenille dept	Palmer	10/26	11/16
5	Vito De Ferro, 126 Forbes st	33	*Power house	Sager	10/24	11/16
6	Wm. Silmak, 12 Morris st	20	*Chenille dept	Olbrycht	10/31	11/16
7	James Czenusniak	20	*Chenille dept	Ryseak	10/26	11/16
8	Harold Craig, 299 Locust st	23	*Warehouse	Palmer	11/13	11/16
9	Alex. Moran, 40 James st	23	*Warehouse	Olbrycht Sweitlicki	10/31	11/16
10	Louis Kncupple, 260 Locust av	40	*Chenille dept	Palmer	10/31	11/16
11	Carl Schwartz, 57 Glen ave	30	*Chenille finish	Schopmeier Pooler	*10/28	11/18
12	Bernice Litwa, 70 Grand st	15	*Tapestry dept	Kulpa	11/ 4	11/18
13	John Carroll, 12 Meadow st	18	*Spinning room	Pooler	11/13	11/18
14	Edward Kruger, 55½ Brookside ave	32	*Chenille finish	Nadler	11/14	11/22
15	Peter Peculis, 18 Third st	37	*Mill hand	Sager	11/ 9	11/23
16	Thomas Kenny, 5 Charles st	50	*Spinner	Nadler	11/ 8	11/29
17	Chas. Van Natta, 62 Elizabeth st	27	*Spinner	Nadler	11/ 9	11/29
18	Mary Silmak, 12 Morris st (Attended brother, contact case.)	22	Chalmers Knitting mill	Olbrycht	11/29	12/13
19	Henry Coalter, 5 Rockton st	19	*Mill hand	Nadler	11/27	12/ 3
20	Mrs. Adele Quick, 19 Arnold ave	60	Housekeeper	Palmer	11/18	12/ 4
21	Mrs. Herbert Horton, 61 Second ave	44	*Chenille dept	Nadler	11/21	12/ 8
22	Joseph Barottini, 13 Gilliland ave	36	Sanford mill	Nadler	12/13	12/17

* McCleary, Wallin & Crouse mill.

TABLE No. 2

CASES OF TYPHOID FOR RESPECTIVE AGES

AGE	Cases	Percentage
0-10	....	....
10-20	5	23
20-30	6	26
30-40	5	23
40-50	3	14
50-60	3	14

TABLE No. 3

Cases of Typhoid on Each Milk Dealer's Route

MILKMAN	Cases	Per cent	Quantity delivered	Per cent
Nadler	7	32.5	3,500	43
Krutz	1	4.5	100	2
Sager	3	13.5	1,600	20
Palmer	4	18.0	550	7
Olbrycht	2	9.0	350	5
Ryseak	1	4.5	280	4
Pooler	1	4.5	300	5
Kulpa	1	4.5	500	6
Schopmeier	1	4.5	320	4
Sweitlicki	1	4.5	300	4

TABLE No. 4

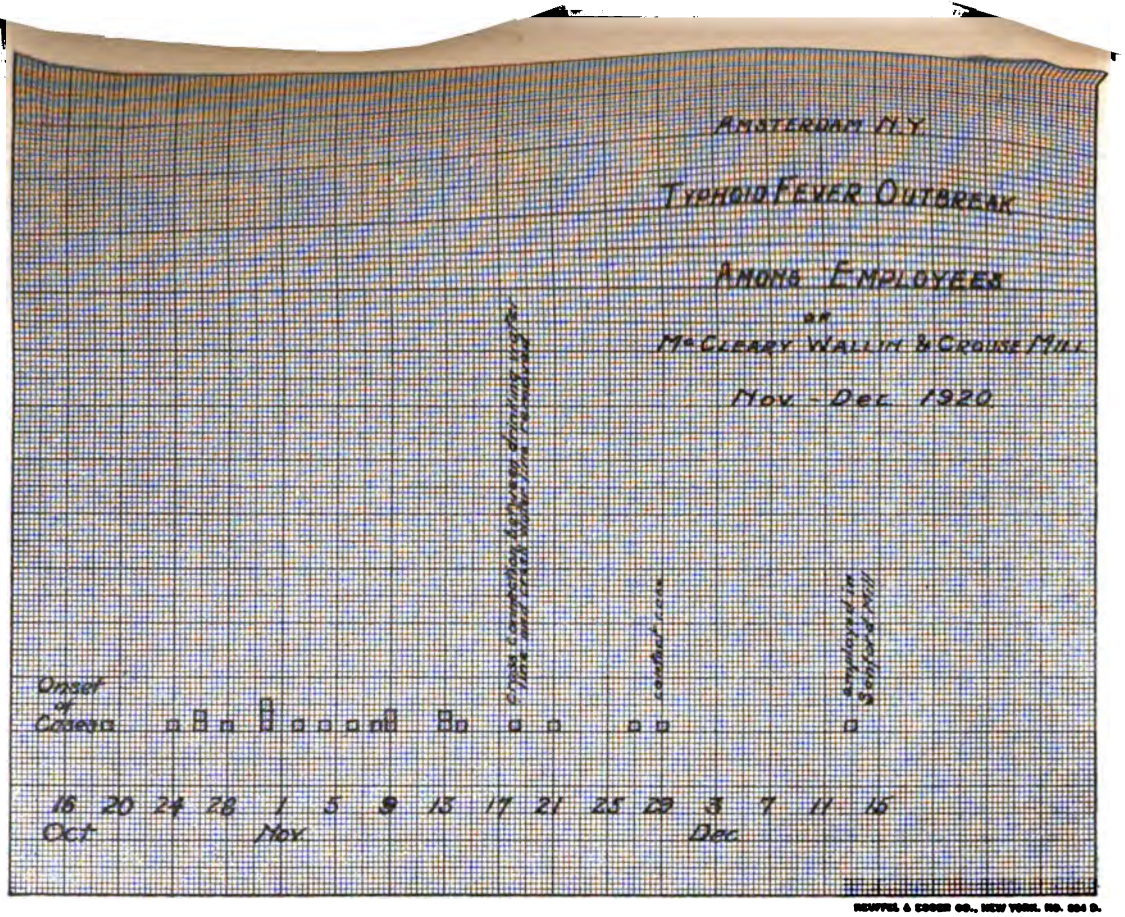
Number of Cases and Employees in Various Departments of McCleary, Wallin and Crouse Mill

DEPARTMENT	Number of employees	Number of cases developed
Total mill	1,915	19
Power house	19	1
Warehouse	31	2
Chenille finishing	67	9
Tapestry	....	1
Spinning	....	3
Not classified	....	3

TABLE No. 5

U. S. Weather Bureau Report at Albany, N. Y.

Date, 1920	Precipitation (inches)
Nov. 16	.20
17	.86
18	...
19	T
20	T
21	.13
22	T
23	1.85
24	.03
25	.17
26	......
27	.06
28	T
29	....
30	....



AMSTERDAM, N. Y.—TYPHOID FEVER OUTBREAK AMONG EMPLOYEES OF McCLEARY, WALLIN AND CROUSE MILL, NOV.-DEC., 1920

AMSTERDAM

An investigation of the public water supply of the city of Amsterdam was made by Mr. Earl Devendorf, assistant engineer in this Department, on April 20, 1921. Previous investigations of this supply have been made in 1909, 1915 and 1918, the reports upon which may be found in the Annual Reports of the State Department of Health for the respective years.

The water supply is owned by the city and operated under the Department of Public Works, of which Mr. Burr M. Stark is Commissioner. The supply is derived by gravity from Hans creek, the intake being located some 14 miles north of the city. Hans creek with its various reservoirs has a watershed area above the intake of 24¾ square miles with practically no population. While there is no resident population other than the caretaker's house existing on the watershed, there is considerable opportunity for pollution of the public water supply, as is true of all surface supplies, due to accidental or incidental contamination from trespassers on the watershed. Fishermen are allowed to fish on both the Cook and Glenwild reservoirs. Rules and regulations were enacted by this Department in 1890 for the sanitary protection of the public water supply. In addition to the possibility of pollution of the public water supply by the fishermen, the supply is, at times of rainfall and heavy runoff, very unsatisfactory from an aesthetic standpoint due to the high color and turbidity. In this connection it might be pointed out that the installation of a properly designed and efficiently operated filter plant would insure the furnishing of a supply that would be both of a satisfactory sanitary quality and of a good physical quality at all times.

The recent inspection disclosed that the conditions surrounding the supply were practically the same as existed at the time of the previous inspection with the exception that the city has caused double check valves to be installed at the mills where auxiliary fire supplies are used. These mills are the McCleary, Wallin & Crouse mill, the Sanford mill and the Shuttleworth mill. The installation of these double check valves is due to an outbreak of typhoid fever occurring among the employees of the McCleary, Wallin & Crouse mill in 1920, as a result of which the city authorities were advised by this Department to immediately cause double check valves to be installed between the city mains and the mains of those mills provided with auxiliary sources of supply for fire purposes, in order that no contaminated water might enter the city distribution system.

The city authorities still allow the cutting of ice upon the distributing reservoir which, as pointed out before, constitutes a menace to the purity of the supply since the opportunity for contamination from the workmen and horses engaged in cutting the ice is ever present. In the distributing reservoir algae growths during the past summer have been overcome by the use of copper sulphate, which was applied at three different times during the past summer, using a total of some 200 pounds.

It was, therefore, recommended in a report dated May 10, 1921:

1. That the city authorities rigorously enforce the rules and regulations enacted for the protection of their public water supply and endeavor to prevent fishermen or hunters from trespassing upon the watershed.
2. That the city authorities in charge of the water supply consider the matter of the installation of a filtration plant for treating the public water supply in order that a supply may be furnished the inhabitants which shall be at all times both of a satisfactory sanitary quality and a good physical quality.
3. That, as previously recommended, the cutting of ice on the distributing reservoir be discontinued or the supply be satisfactorily sterilized with liquid chlorine.
4. That adequate provision be made for diverting Bunn creek water from the distributing reservoir under all conditions of flow.

ANDES

A reinspection of the public water supply of the village of Andes, Delaware county, N. Y., was made by Mr. W. W. Young of this Division on October 27, 1921. A previous inspection of this supply was made in 1915 and the report thereon has been published in the Annual Report of the Department for that year.

Andes has a population of approximately 450, practically the entire population being served by the public water supply, which is owned and controlled by the Andes Water Company. The supply is derived from three springs. Water from these springs flows by gravity through pipes to a reservoir near the first spring. This reservoir has a capacity of about 125,000 gallons, and the water from it is delivered by gravity to the distribution system. In general the details of the waterworks system and the sources of supply remain as described in the previous report.

At the time of the last inspection it was recommended that suitable drainage ditches be constructed to divert surface wash from the Murray spring and that the land owned by the company about the spring be enclosed by a suitable fence for the purpose of excluding all persons, animals or fowls from the immediate vicinity of the spring. The recent inspection disclosed that land around the Spring No 3, or Murray spring, has been fenced but no ditching has been done. This spring is located in a steep ravine on the slopes of which, just above the spring, about 20 cows were noted grazing at the time of the inspection.

The Delaware and Northern Railroad Company does not obtain its water from the public supply but secures it through a pipe connection from a covered spring located on higher ground about 300 feet from the railroad depot. A small area above this spring was frequented by chickens, but if this were ditched and fenced off the spring would appear fairly well protected from opportunities for pollution from surface wash.

It was, therefore, recommended in a report dated November 5, 1921:

1. That spring No. 2 be cleaned and drainage ditches provided to divert all surface water from it. And the area around the spring fenced and posted to keep trespassers from coming in the vicinity of the spring and causing any pollution of the supply.
2. That the supply from spring No. 3 be either abandoned or entirely cleaned and protected from pollution by posting and fencing the area around the reservoir and by the construction of a dam and by-pass for the storm water from the ravine above it, or by other satisfactory means.
3. That the spring used as a source of supply by the Delaware and Northern Railroad Company be immediately protected from pollution by the construction of drainage ditches and fencing and posting an area around the spring for a distance at least 10 feet around the spring to prevent the danger of pollution by animals or visitors.

ANGELICA

A reinspection of the public water supply of the village of Angelica, Allegany county, was made by Mr. Alfred Mullikin, assistant engineer in this Department, on April 19, 1921. A previous inspection of this supply was made by the Division in the year 1917 and the report thereon published in the Annual Report of the Department for that year.

Angelica is located about 40 miles west of the city of Hornell. The present population is estimated at 1,000. Of the total population 90 per cent are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a Board of Water Commissioners of which Mr. T. S. Gillies is president and Mr. E. D. Dickson is superintendent.

The water supply is derived from a spring located on a private farm about 5 miles east of the village. From the spring the water is pumped to the village.

The spring is housed under a brick building and is partly covered with a concrete floor on which the pumping machinery rests. The entire floor and part of the surrounding ground is impregnated with cylinder oil, and it is possible that some of this oil may reach the supply. On the bank 25 feet east of the spring a gasoline tank is embedded and it is thought by the village officials that gasoline leaks from the tank and enters the supply. The farm house in which the pump attendant lives is located about 200 feet east of the spring. The barnyard is within 20 or 25 feet of the spring on the downstream side. About 100 feet northeast and above the spring at a higher elevation is a full earth vault privy which may be a source of contamination of the spring supply under certain hydraulic conditions of the ground water. There are no other houses located within 1,000 feet of the spring.

The village supply is cross-connected with the Pittsburgh, Shawmut and Northern railroad supply by a 6-inch pipe line. The Railroad Company obtains water from a dug well, which is 12 feet in diameter and 15 feet deep, having a masonry wall extending slightly above the ground surface and provided with a heavy wood cover. The well is located about 20 feet from the main course of Angelica creek. Water is pumped from the well to a tank near the railroad station.

In our previous report it has been recommended that the well adjacent to the village spring basin be covered and provided with a pump arranged in such a way that pumped water cannot flow back into the well; that the walls of the spring basin and the overflow pipe therefrom be raised to an elevation above flood waters; that when the spring basin walls are raised the pumping equipment be placed either in a separate building or that a portion of the spring house containing it be tightly sealed from the basin holding the spring water; that care should be exercised to prevent contamination of the ground water from nearby sources of pollution and if, after the carrying out of the above recommendations, future analyses indicate contamination, steps be taken to secure the control of the nearby farm buildings and remove such sources of contamination as may menace the quality of the supply, and, that in order to eliminate the necessity of pumping, a survey be made of the pipe line to the village in order to discover at what points the line rises above the hydraulic gradient and to correct such conditions as may be found to retard the free flow of water through the mains. From the recent inspection it appears that the previous recommendations have not been carried out.

In a report dated June 15, 1921, the following recommendations were made:

> 1. That the village authorities immediately carry out the previous recommendations of this Department as outlined in this report and if this is found to be impracticable a new supply be secured, free from all sources of pollution.
>
> 2. That in order to protect the village supply from contamination, all connections between the village supply and private supplies be severed, or, if this is not practicable, provided with double-check valves in accordance with the general plan approved by this Department.

ANGOLA

A reinspection of the public water supply of the village of Angola, Erie county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on December 15, 1920. A previous inspection of this supply was made by this Division in 1912 and a report thereon published in the Annual Report for that year.

Angola is located about 2 miles east of Lake Erie and 22 miles south of Buffalo. The present population of the village is estimated at 1,500, with an additional population in summer in the lake shore district of about 750, all of whom are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of Board of Water Commissioners of which Mr. Albert Candee is president.

The water supply is derived from Lake Erie and flows by gravity through a slow sand filter after which it is pumped into the distributing system. In general the details of the waterworks system remain as described in the previous report. The village authorities intend to install a meter at the filter plant to measure the consumption. They also contemplate voting on the advisability of adopting a new electric unit next fall on account of the failure in the past of the supply of gas which is now used to operate the pumping machinery.

From the recent inspection it appears that the previous recommendations of this Department have in part been carried out in that the fishing which takes place about two months of the year is done about 1½ miles out from the shore; that bathing is not indulged in closer than some 600 feet to the water intake; that while there are no signs to call attention to the restrictions preventing pollution of the lake in the vicinity of the water intake, the carrying out of regulations is imposed upon the pump attendant; that all cottages and camps on the water front are properly provided with privies for the disposal of sewage, as far as was noticed with the exception of one privy vault located some 500 feet south of the plant; that the filtration plant has not been enlarged or properly maintained to sufficiently increase it to a high standard of efficiency in that the amount of sand in the beds has been considerably varied and at times almost completely removed.

In a report dated February 7, 1921, the following conclusions were drawn:

1. That the water supply at the time of the inspection was of a very unsatisfactory sanitary quality.
2. That proper results according to the analyses of the water are not being produced by the filters.
3. That considerable fine sand from the lake is washed into the filter and on account of frequent cleaning out of the lake sand, the depth of sand varies considerably from time to time.
4. That the authorities in charge of the water supply have not carried out the previous recommendations of this Department, namely, that the filtration plant should be enlarged in order to maintain a higher efficiency in its operation and that the filters be operated at a rate which is considered good engineering practice.
5. That there remain certain possibilities for serious and dangerous contamination of the supply from the close proximity of some of the open vaulted privies to the plant.

It was, therefore, recommended:

1. That the filters be enlarged and reconstructed in order that lower rates may be maintained and a high efficiency obtained.
2. That a depth of not less than 30 inches of sand of uniform size be maintained above the crushed stone or gravel at all times.
3. That as far as possible all sources of pollution near the intake be eliminated.
4. That the supply be properly sterilized after filtration by the use of some sterilizing agent preferably liquid chlorine.

ANTWERP

A reinspection of the public water supply of the village of Antwerp, Jefferson county, N. Y., was made by Mr. W. W. Young of this Division on September 21, 1921. Previous inspections of this supply have been made in 1918 and 1920 and the reports thereon published in the Annual Reports of the Department for those years.

The village has a present population estimated at about 1,000 and is located in the northeastern part of Jefferson county. Of the total population about 90 per cent are served with the public water supply. The water works are owned and operated by the municipality under the direction of a board of water commissioners for whom Charles Bendis is superintendent.

The water supply is derived from the Indian river and is pumped directly into the distribution system. A chlorinator for the sterilization of the supply is connected with the suction of each of the two pumps. In general the details of the waterworks system remain as described in the previous reports with the important exception of the equipment of both pumps with liquid chlorine sterilization apparatus.

The watershed tributary to the supply is about 157 square miles, largely agricultural, and contains a scattered population of about 3,000, or about 19 per square mile. Beside the pollution from small settlements and from fields, pastures and houses and barnyards, 6 dwellings in the village discharge sewage into the pond above the intake.

In the previous reports of this Department it has been recommended that the supply be purified or a new source developed, that the advice of a competent engineer be secured and that pending the installation of a new or purified supply, the supply be continuously sterilized by the application of the proper amount of liquid chlorine. From the inspection it appears that the last recommendation is being complied with in part, but no active steps are being taken to comply with the other recommendations.

Samples of water were collected at the time of the inspection, the results of the analysis of which indicate that a sufficient amount of chlorine was not being applied to properly sterilize the water.

In a report dated October 6, 1921, the following recommendations were made:

> 1. That as previously recommended the authorities in charge of the public water supply at once engage a competent engineer to aid them in either procuring a new supply that shall be both sufficient in quantity and of a good sanitary quality, or provide a properly designed filter plant to treat the present supply.
> 2. That the rate of application of chlorine be increased and the chlorine applied in a continuous manner in sufficient quantity to show an excess by means of the starch iodide test, a copy of which is attached, in order that the supply may be effectively sterilized at all times.

ARKPORT

A reinspection of the public water supply of the village of Arkport, Steuben county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on April 20, 1921.

A previous inspection of the supply was made by this Division in the year 1917 and a report thereon published in the Annual Report of the Department for that year.

Arkport is located in the valley of the Canisteo river, 5 miles northwest of Hornell. The present population is estimated at 560. Of the total population 80 per cent are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of trustees, of which Mr. C. A. Higgins is president and also the acting superintendent. The water supply is derived from Lime Kiln creek at a point about ½ mile northeast of the village. In general the details of the waterworks system remain as described in a previous report.

Lime Kiln creek begins northeast of the village near Daneville and flows in a southwesterly direction to the village and discharges into Canisteo river. The area of the watershed above the diversion dam is about

5 square miles. This area consists of a narrow valley formed between high, steep hills, of which 75 per cent is heavily wooded, the remaining land being used for agricultural purposes. The soil is mostly of loose gravel. There is very little trespassing on the watershed. There is a small amount of travel on the highways. There is one house occupied on the watershed about 2 miles above the intake which is provided with an earth vault privy so arranged as not to directly contaminate the supply. Another house on the watershed is not occupied. Careful inspections are made of the watershed monthly during the summer. Rules and regulations for the protection from contamination of the water supply were enacted by this Department in the year of 1915. The large part of the watershed is owned by the city of Hornell. The water is not treated in any manner to prevent vegetable growths. About ½ acre of land around the reservoir has been fenced and posted. The reservoir is not covered. The water from it flows through a 10-inch cast-iron pipe to the village distributing system.

In our previous report it has been recommended that consideration be given to the installation of a purification plant consisting of filters and supplementary sterilization with liquid chlorine, that in order to render the supply safe at all times for potable purposes and pending the installation of a complete purification plant, apparatus be provided and the water be sterilized with liquid chlorine. From the recent inspection it appears that the previous recommendations have not been acted upon. The village supply is not cross-connected to any private supply. The P., S. & N. R. R. used the village supply for drinking purposes.

In a report upon an inspection of the public water supply of Arkport, dated May 23, 1921, the following conclusions were drawn:

1. That the water supply, although from a surface source and not treated, is of a relatively satisfactory sanitary quality.
2. That there are certain opportunities for serious contamination of the supply from accidental, incidental or wilful pollution from inhabitants living near or passing over the watershed.
3. That the village authorities in charge of the water supply have not carried out the previous recommendations of this Department, in that consideration has not been given to the installation of a purification plant and sterilizing apparatus.

It was, therefore, recommended that the village authorities carry out the previous recommendations of this Department regarding the treatment of the supply as outlined above.

ARKVILLE

A reinspection of the public water supply of Arkville, N. Y., was made by Mr. W. W. Young of this Division on October 26, 1921. Previous inspections of this supply were made in 1909 and 1917 and reports thereon were published in the Annual Reports of the Department for those years.

Arkville has a population of about 400 and is located in the eastern part of Delaware county. About 90 per cent of the population are served by the public water supply. The waterworks are owned and operated by the Arkville Water Company of which Mr. Henry M. Cowan is president. The water supply is derived from a mountain brook about 1 mile southeast of the village from which the water flows to the consumers by gravity. In general the supply is practically the same as described in the previous reports.

The watershed above the intake is about ¾ of a square mile in area, contains no houses, and is subject only to such pollution as might be received from occasional passing of animals or persons over the watershed.

In a report, dated November 18, 1921, it was concluded that, at the time of the inspection the public water supply of Arkville was of a fairly satisfactory sanitary quality. It was, therefore, recommended that the water company continue to maintain constant and careful supervision of the sanitary conditions of the watershed and intake in order that the supply may at all times be free from contamination.

ATTICA

A reinspection of the public water supply of the village of Attica, Wyoming county, N. Y. was made by Mr. Alfred Mullikin, assistant engineer in this Department, on December 18, 1920. Previous inspections of this supply were made by this Division in the year of 1908 and 1915 and reports thereon published in the Annual Reports of the Department for the years 1908 and 1916, respectively.

Attica is located on Tonawanda creek about 30 miles east of the city of Buffalo. The present population is estimated at 2,000, of which 98 per cent are served with water from the public water supply. The remaining 2 per cent are furnished by private wells. The waterworks are owned and operated by the municipality under the direction of the village board of trustees, of which Mr. Harry Morgan is president. The water supply is derived from an impounding reservoir formed by a dam constructed across Crow creek about 2½ miles south of the village. The reservoir has a capacity of some 12,000,000 gallons. From the reservoir the water is conducted by gravity to pressure mechanical filters which are located in the southern part of the village. From these filters the water flows directly into the distributing system. There is no record kept or any measure made of the water consumption, but based upon an assumed per capita consumption of 80 gallons the average daily domestic water consumption is approximately 156,000 gallons, or the total water consumption, including that used by the railroad, about 290,000 per day.

The village is not provided with a sewerage system, there being about 100 open cesspools and privy vaults. Seventy-five per cent of the population of the village dispose of their sewage by means of 7 private sewers which empty into Tonawanda creek. There are a number of wells, 70 per cent of which are within 100 feet of privy vaults. Many of these privy vaults are of concrete and most of the privies have been screened. Each year notices are sent to residents of the village to instruct then how to clean and care for privies, cesspools, etc., and it is claimed by the health officer that such instruction has produced good results.

In general the details of the waterworks system remain as described in the previous reports with the exception of the following changes: In 1918, the village took over the water supply which was formerly owned and controlled by the Attica Water, Gas and Electric Company; it has laid some new pipe consisting of one-half of a mile of 8-inch cast-iron pipe; two new filter units of the Roberts horizontal pressure type have been added to the filter plant and are located in the same building with two old vertical pressure filters of the New York Continental type; the artificial pond located near the Westinghouse manufacturing plant and into which waste water from this plant drains has been abandoned as a source of supply for the village for purposes of fire protection. The village authorities intend to construct a reservoir on Bennington hill, to supply the west side of the village, as soon as the prices decline.

The watershed of Crow creek has an area of about 9.3 square miles and, as pointed out in previous reports, is subject to considerable pollution. There are no water rules or regulations for the protection of the watershed. The reservoir is fenced and no ice is cut during the year. As this reservoir has not sufficient elevation to maintain an entirely satisfactory pressure in the village the authorities have considered the development of another source of supply from Stony brook which is at a greater elevation and would therefore provide sufficient pressure for all purposes but is some 8 miles south of the village and would therefore require the construction of a long force main. The Stony brook watershed has an area of approximately 9.7 square miles and a dry weather flow of 47,300 cubic feet or 354,000 gallons per day. The yield of the 2 watersheds, Stony brook and Crow creek, is practically the same. No active steps have yet been taken toward the development of this supply.

In our previous reports it has been recommended that the water company proceed at once to so improve the present supply or to so develop a new supply as to furnish the village with pure and wholesome water; that in case the water company fails to make the above improvements the village consider the question of securing a satisfactory supply of pure water either by taking over and improving the present supply or by securing a new and independent supply; that in view of the uncertainty as to which of the above courses is the best or the most economical to pursue, the village retain the services of a competent sanitary engineer to make a study of the various problems outlined in the report and advise them as to the proper procedure to follow before determining the proper course to follow: that pending the development of a satisfactory supply by the village the sanitary quality of the present supply be protected by removing, insofar as possible, the sources of pollution from the present watershed and effectively sterilizing the water with liquid chlorine or hypochlorite. In connection with the development of the supply from either Crow creek or Stony brook it has been pointed out that it would be necessary to remove certain sources of pollution from the watershed and in order to effectively do this it seems advisable that application be made to this Department for the enactment of rules and regulations for the protection of the supply from contamination.

From the recent inspection it appears that the previous recommendations have in part been carried out in that the village authorities, while they have not developed a new supply, have taken over the present supply from the water company. They have not, however, installed apparatus for the sterilization of the water by the application of liquid chlorine or by some other satisfactory method.

In a report upon an inspection of the supply the following recommendations were made:

1. That the village authorities install suitable chlorinating apparatus and effectively sterilize all water delivered to the consumers by the application of the proper amount of liquid chlorine.
2. That alum be applied to the water at all times in such proportion as may be found necessary for the efficient operation of the filters.
3. That the village authorities continue their careful supervision of the watershed and remove as far as possible all sources of possible pollution.
4. That if any difficulty is found in removing these sources of possible pollution, the authorities apply to this Department for the enactment of rules and regulations for the protection from contamination of the water supply of the village.

AUBURN

An investigation of the public water supply of the city of Auburn was made by Mr. Earl Devendorf, assistant engineer in this Department, on December 16, 1920.

Auburn is a city of approximately 38,000 inhabitants, located in the central part of Cayuga county some 30 miles southwest of Syracuse. It is on the Auburn branch of the New York Central railroad, the Lehigh Valley railroad and the New York State Electric railroad. The city is served by a system of separate sewers, the effluent of which is discharged into two small brooks tributary to the Owasco lake outlet, after treatment, in a disposal plant consisting of grit and screen chambers, settling tanks and contact beds.

The original water supply was furnished by the Auburn Water Works Company which constructed the plant in 1865, when the population was approximately 14,000. The city entered into negotiations in 1892 for the purchase of the waterworks and finally took over the system in 1894. The supply was derived by pumping from Owasco lake outlet.

The waterworks system has been constructed and operated under a board of water commissioners, but on January 1, 1921, the city of Auburn took over the affairs of the water board under the provision of the city charter and consolidated the water department with the other city departments under the supervision of the city manager, Mr. John P. Jaeckel. Mr. George A. Lewis is chief engineer and superintendent of the water department. The original water supply of the city of Auburn was derived by pumping from the lake outlet at a point near the state dam about 9,000 feet below the lake. The water was pumped from here directly into the distribution system. In 1883, on account of the dangers of pollution in this outlet, a 24-inch pipe was extended upstream into the lake and a second pumping station erected on the pier 1,000 feet from the shore with a 30-inch wrought-iron intake extending 600 feet further into the lake at a point where the water was about 15 feet deep. The water was pumped to the lower station over a ridge about 17 feet above the lake level where it was again pumped to the distribution system by the upper pumping station. In 1907 a new intake, 36 inches in diameter, was carried out into the lake a distance of 1,875 feet to a point where the water was 40 feet deep, and this intake has been in use since it was laid, although the old intake is still in existence.

At present the water is pumped from the lake to the purification plant where it is filtered and later pumped to the public distribution system. The consumption varies from 5 to 7 million gallons per day. The average daily pumpage for the year ending December 31, 1919, was 6,214,847 gallons or 158 gallons per capita per day. For the year 1918 the pumpage amounted to 178 gallons per capita per day. This decrease in pumpage was largely due to the installation of meters during the year 1919, when the percentage of services metered was increased from 48 per cent to 83 per cent. At the present time the city has on hand between 400 and 500 meters which will be installed as opportunity permits. The pressure at the pumping station is 60 pounds per square inch while in the city it varies from 80 to 100 pounds per square inch. No storage is provided.

At the time of the inspection the matter of cross-connections between the public mains and any private fire supplies was taken up and it was found that all cross-connections are equipped with double check and gate valves placed in accessible concrete manholes. Frequent inspection should be made of the cross-connections in order to see that they are all in proper operating condition.

The upper pumping station was installed in 1904 and is used for pumping raw water to the purification plant. It is equipped with one Snow double-acting cross-compound steam pump, having a capacity of 10,000,000 gallons per day, and with a 7,500,000 gallon Gaskill horizontal compound pump as an auxiliary. The lower pumping station, used for pumping the filtered water to the city mains, is equipped with a 7½ million gallon Gaskill pump and a 10,000,000 gallon R. D. Wood double-acting pump. When water-power is available the pumps are operated by three water turbines which are operated under a small head ranging from 10 to 14 feet. At present, when the water turbines are used, the engine is allowed to run free. It is proposed to disconnect the steam engine from the pump and to supply a connection that will permit the pump to operate with the water wheel alone without operating the engine.

Owasco lake, from which the supply is obtained, is 10.9 miles in length and about 1 mile in width throughout its entire length and has a surface area of nearly 10 square miles and a total capacity of approximately 200,000 million gallons. Its average depth is 96 feet and its maximum depth is 177 feet. The entire drainage area of the lake is approximately 200 square miles and has a population of approximately 10,000 persons, or about 50 per square mile. This includes the population of the three villages of Moravia, Groton and Locke and the two villages of Niles and Owasco. None of these villages have a public sewer system, although there are some private sewers in use. On the banks of the lake are about 200 cottages and some small hotels, the waste from which constitutes a menace to the purity of the water supply.

In order to minimize this opportunity for pollution rules and regulations for the sanitary protection of the public water supply of the city of Auburn were enacted in 1906, and the entire watershed is patroled by inspectors of the water board, who have in a thorough manner enforced the rules. In this connection the privies have been moved, watertight boxes have been substituted for leaky ones, barns and barnyards have been removed and cesspools provided. The water board has at times encountered opposition to the enforcement of these rules and has had several notable law suits concerning the enforcement of these rules and regulations, which have been decided in favor of the city.

In order to minimize the danger resulting from this pollution hypochlorite of lime was used to sterilize the public water supply in May, 1911. The operation was not continuous and was only used at such times as analyses indicated that pollution was reaching the supply at the intake. In October, 1913, liquid chlorine was substituted for hypochlorite of lime in sterilizing the supply. The liquid chlorine was applied by a Leavitt-Jackson chlorinator. The gas was fed through a distributor placed in a suction well and when used was applied at the average rate of approximately .3 p. p. m. In 1919 a Wallace and Tiernan dry feed manual control chlorinator was purchased. Just previous to the time of the inspection chlorine was applied for 5 days, from December 10th to the 14th, inclusive, at an average rate of .14 p. p. m.

The question of the filtration of the public water supply was before the public for a number of years before it was finally approved, and contracts for the construction of a filter plant were finally let in 1917. Due to the scarcity of labor and very high prices of material throughout the period of the war the contractors were delayed and construction finally stopped in the spring of 1919, as the contractors were unable to finance further construction. The city itself then undertook to assist the contractors in financing further construction and the purification plant was finally finished and put in operation on July 8, 1920.

The filtration plant is located near the outlet, at a point just above the lower pumping station, and consists of 4 slow sand filters each having an area of .395 acres, giving a total area of 1.56 acres. Water is maintained at an average depth of approximately 5 feet above the sand. The filters are underlaid with drains on top of which is placed 1 foot of graded gravel and 3 feet of sand. No sample of the sand was obtained and no information was available as to the effective size or the uniformity coefficient of the sand used in the filters. The filter beds are operated at a rate varying from 1,000,000 to 7,000,000 gallons per acre per day. The average rate of filtration for the month of November, 1920, was 3.8 million gallons per acre per day, while the maximum was 5.16 and the minimum 2.56 million gallons per acre per day. The initial loss of head is 0.5 feet and a bed is cleaned when the loss of head becomes 5 feet. One sand washer for each two filter units is provided for washing the sand scraped from the bed at times of cleaning. Data obtained from the operator show that 5,485 gallons of water per cubic yard of sand washed were used in cleaning the sand from Bed No. 1. During the time the plant has been in operation it has been the practice to scrape the beds approximately once every two months, and it is estimated that to the present time approximately 1/10 of a foot has been removed. In this connection care should be taken not to remove too great a depth of the sand without replacing the sand, as the depth of the filter sand would be reduced to such a point as to seriously affect the effective purification afforded by the filter beds. Loss of head gauges connected to Venturi meters and rate controllers for maintaining a proper rate of filtration are provided for each filter unit. At the filtration plant a laboratory is maintained and a competent operator, experienced in the operation of water purification plants, is employed to supervise the operation of the plant. Daily analyses were begun in the laboratory on September 8, 1920.

The efficiency of the operation of the filter plant as based on the average results of analyses made at the laboratory at the plant for the month of November, 1920, indicate a color removal of 31 per cent and a turbidity removal of 100 per cent. The bacterial removal based upon the average results of the gelatine count for the month of November is 96.7 per cent. Out of 26 daily analyses made during the month of November B. coli were found present in 23 of the 10 cc.; 10 of the 1 cc. and 3 of the 1/10 cc. samples of the raw water and in none of the filtered water samples.

At the time of the inspection samples of the public water supply were collected and sent to the Division of Laboratories and Research for analyses.

The results of the analyses of the raw water collected at the filter plant show a hard water having little color and no turbidity. The amount of nitrogen present in its various forms is moderate with the exception of that as nitrite. The amount of oxygen consumed and the chlorine content are also moderate. The results of the bacterial examination show high total bacterial counts which may be in part due to the multiplication of various forms of water bacteria as a result of the delay in transit, since the samples were five days in reaching the laboratory. Organisms of the B. coli type were absent in all of the inoculations examined, indicating that the raw water was free from any active contamination at the time of the inspection.

The results of the examination of the filtered water collected from the lower pumping station and from a tap in the city show a hard water having no color or turbidity. The amount of nitrogen present in its various forms is moderate, as is the oxygen consumed and chlorine content. The results of the bacterial examination show a rather high total bacterial count due perhaps to the multiplication of various forms of water bacteria as a result of the delay in transit. Organisms of the B. coli type were absent in all of the inoculations examined, indicating that the supply was free from any active contamination.

In view of the above facts, the following recommendations were made in a report dated March 9, 1921:

1. That the authorities in charge of the public water supply continue their careful supervision of the conditions on the watershed and employ the necessary inspectors in order that no insanitary conditions may be allowed to exist.
2. That the authorities in charge of the public water supply continue to operate the purification plant under the supervision of a competent operator, in order that a water of satisfactory sanitary quality shall at all times be supplied for the consumption in the city.

AVOCA

A reinspection of the public water supply of the village of Avoca, Steuben county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on December 13, 1920. A previous inspection of this supply was made by this Division in the year 1914 and a report thereon published in the Annual Report of this Department for that year.

Avoca is located in the north central part of Steuben county in the valley of the Cohocton river. The present population is estimated at 1,100, of which 95 per cent are served with water from the public water supply. The waterworks are owned and operated by the municipality, under the direction of a board of trustees of which Mr. Angelo Walker is president and Mr. W. C. Gallup is superintendent.

The water supply is derived from several springs located in the valley of the small stream known as Cotton creek, at a point about 1¼ miles in a direct line west of the village. From these springs the water is let to two central spring houses before it is discharged into the distributing system. The spring houses measure about 12 by 14 feet in plan and are provided with a concrete floor having a collecting chamber. In 1 house the collecting chamber is 4 feet in diameter and in the other 6 feet in diameter.

The spring water from the masonry reservoir is delivered by gravity to a distributing system of some 7 miles of pipe ranging from 2 to 8 inches in diameter. Each fall the flow of water from the springs is supplemented by opening a valve and allowing creek water to enter the masonry reservoir. The object of doing this is to have sufficient water storage for fire purposes as the yield of the springs is less at this season. The pressure in the municipality is approximately 50 pounds per square inch. The service connections in the village are not provided with any meters. The average daily water consumption is not known but based on an assumed per capita consumption of 80 gallons per day probably amounts to 83,600 gallons. In general, the details of the waterworks system remain as described in the previous report.

There are 2 reservoirs; 1 for the collection of creek water and the other for the storage of spring water. The creek reservoir has a storage capacity of approximately 1,000,000 gallons of water. A stone reservoir, which is located inside of and at the extreme west end of the creek reservoir is for the storage of spring water and has a capacity of about 230,000 gallons. It is provided with a cement bottom. It is cleaned every year and was cleaned twice during the year 1920. There seemed, however, to be evidence of some algae growth on the bottom. The reservoir is not treated to prevent such growths. A fence has not been provided to prevent trespassing. Ice is not cut from this reservoir but it is cut from the creek reservoir. The southern masonry wall of the spring reservoir contains a pipe which connects the spring reservoir with the creek reservoir. At the northern end is an 8-inch submerged outlet pipe turned up and provided with a screen cover. On the outside of the 18-inch concrete wall which forms the north side of the creek and spring reservoirs there seemed to be several leaks but it could not be ascertained whether these leaks came from the creek supply or from the spring supply.

The area of land owned by the village in the vicinity of the spring reservoir consists of about 40 acres. There were no direct sources of pollution noticed at the spring reservoir outside of the possibility of leakage of the creek water through the masonry wall and the entrance of the creek water through the connecting pipe from the creek supply.

On top of the ground above each spring a concrete apron is provided as a protection from pollution of the supply but it is so constructed that surface wash from the hills in one case and from the highway in another, can collect on this concrete apron and be diverted directly into the springs. There are only 2 or 3 farm houses within one-half of a mile of Cotton creek and probably only a small amount of pollution of the creek water occurs from surface wash near these buildings and from manure piles and animal enclosures. The watershed area of the creek is rather hilly and devoted to agricultural purposes. There is no doubt that cattle have access to the stream from time to time. The area in the vicinity of the springs, which is owned by the village, is apparently free from such sources of contamination, as apparently no cattle are pastured thereon.

In our previous report it has been recommended that the village make the inner reservoir water-tight to prevent the inflow of creek water, as the latter, while of a reasonably safe and desirable source of water supply, is probably inferior to the spring water supply; that a separate intake be laid for the creek water supply to be used independently of the spring supply and only in emergencies; that a strict supervision and frequent inspection be made not only of the springs and the surroundings, but also the watershed of the creek above the reservoir to protect the water from accidental pollution; and that the local authorities be cognizant of the occurrence of sickness on the watershed in order that they may take immediate measures to prevent any possibility of infection of the water supply; that if the Board of Water Commissioners experience any difficulty in preventing any careless or wilful or unnecessary pollution of the water supply that they apply to this Department for the enactment of rules and regulations for the sanitary protection of the public water supply of the village; that measures be taken to prevent leakage or waste of the spring water supply; that in case it becomes necessary to use the creek water supply, this water be subjected to some method of sterilization. From the recent inspection it appears that these recommendations have not been acted upon.

In a report dated February 1, 1921, upon an inspection of the supply, the following recommendations were made:

1. That the leaks in the spring water reservoir be repaired and that the reservoir be kept clean and free from algae growths at all times.
2. That the walls around the spring be extended above the cement apron surrounding them in such a manner as to prevent surface wash entering the spring supply.
3. That a careful supervision be exercised over the creek and spring watershed to determine and eliminate, if possible, all direct sources of pollution.
4. That the authorities in charge of the water supply immediately carry out such recommendations of our previous report as have not yet been carried out, and which are enumerated in this report.

BALDWINSVILLE

A reinspection of the public water supply of Baldwinsville, N. Y. was made by Mr. William Young of this Division on September 23, 1921. Previous inspections of this supply have been made in 1918 and 1920 and the reports thereon published in the Annual Reports of the Department for those years.

Baldwinsville has a present population estimated at 3,700 and is located about 12 miles northwest of Syracuse. Of the total population some 90 per cent are served with the public water supply. The waterworks are owned by the municipality and operated under the direction of a board of water commissioners of which Mr. Abner Tooley is president. The water supply is derived from a dug well 20 feet in depth and 20 feet in diameter with a steel casing and roof, located near the southwesterly limits of the village. From the well the water is delivered by pumping through the distribution system.

A number of sewers pass within a relatively short distance of the well and constitute a menace and potential source of pollution of the well.

In previous reports on the village water supply this Department recommended frequent analyses, consideration of a new well about 1,000 feet away and the immediate installation of a chlorine sterilization plant for use until a new source of supply was obtained.

The village officials present at the inspection suggested in lieu of this, the abandonment of all four of the tile sewers, near the well, and the construction of an entirely new system of iron pipe sewers, laid with watertight leaded joints. The branch sewer from Seneca street and the sewer in front of the waterworks property, are proposed to be laid at a considerable distance farther from the well than at present. The officials also suggested the opening of a street to avoid the passage of traffic on the lane or road now passing within a few feet of the well and also the purchase of several acres of ground adjoining the present properties, to lessen the danger of accidental or other contamination of the water from houses which otherwise might be built on this ground.

It would appear that if properly laid, a system of iron pipe sewers taken in connection with the removal of the thoroughfare, might satisfactorily remove the more imminent dangers of the well from pollution; but in view of the fact that there are 3 or 4 dwellings already located within between about 100 and 200 feet of the well, the water in which is 12 or 14 feet beneath the ground surface, careful inspection of the vicinity should be maintained and any sources of pollution found to exist should be removed.

The securing of all possible additional land within a radius of 500 feet of the well, particularly where the ground lies either higher than or to the west of the well seems desirable as does also the fencing of the property and the strict enforcement of regulations concerning the sanitary care and disposal of any slops, refuse or other organic matter especially within the radius mentioned. The posting of such regulations and the fencing off of the immediate vicinity of the well would be a further safeguard against pollution.

It was recommended in a report dated October 17, 1921:

1. That the municipal authorities in charge of the water supply either carry out at once the previous recommendations of the Department including the moving of the well or securing another supply and temporary sterilization of the water, or
2. That the village authorities divert traffic and trespassers from the vicinity of the well and replace all tile sewers within 200 feet of the well with tightly jointed iron pipe laid through watertight manholes in undisturbed ground, plans for which sewers should be submitted to the State Engineer for approval and temporarily sterilize the well water until such replacement work is completed.

BATAVIA

A reinspection of the public water supply of the city of Batavia was made by Mr. W. J. Erickson, sanitary inspector in this Department, on April 15, 1921. Previous inspections of this supply were made in 1912, 1915 and 1918 and reported upon in the Annual Reports of the Department for the respective years.

Batavia is a city of 15,000 inhabitants, located in the central part of Genesee county. A comprehensive sewer system is provided, discharging into the Tonawanda creek, after passing through a disposal plant consisting of an Imhoff tank and sprinkling filters. Approximately 95 per cent of the population uses the public water supply which is owned by the city and operated under the direction of the common council, in direct charge of Mr. I. J. Carmichael, city clerk. The supply is derived from Tonawanda creek, the intake being located in the southern part of the city. After passing through a gravity mechanical filtration plant supplemented by sterilization, it is pumped into the distribution system.

The intake is located just off the east bank of the Tonawanda creek about 100 feet north of the Lehigh Valley Railroad bridge. A 20-inch cast-iron pipe conducts the water by gravity to the suction well located at the filter plant about 600 feet distant. From this well the water is lifted by the low lift pumps to the coagulation and sedimentation basin located adjacent to the filter plant. The coagulation and sedimentation basin has a capacity of approximately 500,000 gallons and provides an average detention period of about 8 hours. The alum is dissolved in two concrete mixing tanks from which it is fed by gravity through constant level orifices to the raw water at rates varying from 1.5 grains to 12 grains per gallon according to the condition of the raw water.

After sedimentation the water flows by gravity onto six units of gravity mechanical filters of the Pittsburgh filter type. The filters have a capacity of about 500,000 gallons each when operated at a rate of about 125,000,000 gallons per acre per day. Venturi rate controllers regulate the operation of the filters. After filtration the water enters two clear water basins with a capacity of 35,000 gallons.

Liquid chlorine is applied to the filtered water in the discharge line from the clear water basin in such a way that all water is treated. The apparatus consists of a Wallace and Tiernan chlorinator of the automatic control feed type. Scales are provided for the checking of the weight of the chlorine used. At the time of the inspection about 0.3 parts of chlorine per million by weight were being applied. Complete records of the operation of the plant are kept.

Daily tests for turbidity, color and alkalinity are made at the pumping stations. Bacterial analyses of samples collected at points where it is deemed advisable three times a day and analyzed at the county laboratory.

In a report dated May 4, 1921, it was recommended that the filtration and sterilization plant be so operated as to effectively treat the water at all times.

BATAVIA (New York Central Railroad)

An inspection of the sanitary condition of the water supply derived from the New York Central well located at Batavia was made by Mr. W. J. Erickson, sanitary inspector in this Department, on April 15, 1921.

The well is located under the baggage room of the New York Central depot and was developed by driving a 1¼-inch pipe to a depth of about 50 feet, the last 10 feet of which is said to be through rock. The pipe extends about 3½ feet above the floor of the baggage room. The water is drawn by means of a small hand pump.

The floor of the baggage room is tight so there is little probability of any direct surface wash entering the well. The well is, however, located in a thickly populated section and there are many possibilities for contamination reaching the ground water tributary to the well from leaky sewers in the nearby streets. The sewer from the depot itself passes within 50 feet of the well.

Two weeks prior to the time of the inspection the use of the water for drinking purposes by the public in the depot was discontinued, the well water being objectionable on account of its sulphur taste and odor. Since that time the railroad company has shipped water from Rochester in milk cans. Two water coolers are kept filled with water from these cans. Though the water of Rochester is of assured purity, the method of transportation with its many opportunities for contamination cannot be considered sanitary. No information could be obtained as to whether or not the cans are sterilized after being used.

The well with its unsatisfactory location and the high hydrogen sulphide content of its water cannot be considered as a satisfactory source of supply nor can the method of securing a supply by transporting water from Rochester be considered satisfactory. The city supply with efficient purification is of satisfactory quality and it would seem advisable, in order to protect the public, that the railroad should use the city water supply.

In a report dated April 30, 1921, it was recommended:

1. That on account of the disagreeable tastes of the water and the unsatisfactory location of the well, the well be abandoned.
2. That on account of the numerous opportunities for contamination in the handling of the water shipped from Rochester, this method of supplying water be abandoned.
3. That the New York Central railroad install sanitary drinking fountains and connect with the Batavia city supply.

BATH

A reinspection of the public water supply of the village of Bath was made by Mr. W. J. Erickson, sanitary inspector, on April 13, 1921. A previous inspection was made of this supply in 1917, the report upon which is published in the 38th Annual Report of this Department.

Bath, which is a village with a population of about 4,000, is located in the central part of Steuben county. The village is not served by a comprehensive sewer system. A private system serves the county buildings and a few others and discharges directly into the Cohocton river. The water supply is owned and operated by the Bath Waterworks Company of which Mr. Robert E. Kizer is president. The supply is derived from a dug well located in the northwestern part of the village, from which the water is pumped through the distribution system to a standpipe located on a hill in the southwestern part of the village. The consumption ranges from 200,000 gallons to 300,000 gallons daily.

The well is 20 feet in diameter and 28 feet deep and is provided with a steel casing extending from the bottom to about a foot above the ground surface. It is covered with a conical wooden roof. The topography is such that the surface drainage is diverted around the well to a pond located just southwest of it. A house and cesspool are 300 feet and a barn 200 feet from the well. It was said that a pipe was laid with the intention that should there be any necessity to augment the supply it could be done by pumping from this pond. The water in the pond is subject to runoff from an area which is comparatively densely populated and to the overflow from the Cohocton river at times of floods. It becomes very stagnant during the summer, and is very objectionable.

In a report on the inspection of the supply dated May 4, 1921 the following recommendations were made:

1. That the vicinity of the well be maintained in a sanitary condition at all times in order to prevent any possible contamination.
2. That the pumping house be kept in a neat condition and that the pumps be kept clean and as free from oil as possible.
3. That the suction line to the pond be disconnected and the end near the suction line to the well be sealed.

BEACON

A reinspection of the public water supply of the city of Beacon was made by Mr. William Young of this Division on July 11, 1921. Reports on previous investigations were published in the Annual Reports of the Department for the years 1912, 1913, 1918 and 1919.

Beacon, a city of some 11,000 inhabitants, is located in the southern part of Dutchess county. The waterworks are owned and operated by the municipality under the direction of the superintendent of water.

The city water supply is derived by gravity from Melzingah, Mount Beacon and Greer brooks. At times water from Fishkill creek has been delivered into the distribution system by pumping after chlorination. The total water consumption amounting to approximately 550,000 gallons per day or 55 gallons per capita is distributed by gravity.

The watershed area of the Mount Beacon supply is 0.2 square mile. At the Pocket reservoir the watershed area, inclusive of the Mount Beacon watershed is 0.7 square mile. The Melzingah supply has a watershed area of 1.25 square miles. Opportunities for pollution of the supply exist at Mount Beacon from the caretaker's cottage and a private cottage; at the Melzingah supply from several cottages and at the Pocket reservoir from numerous cottages located on the rocky and precipitous slopes above the reservoir. At the time of the inspection the watershed was not visited but conditions are said to remain the same as described in the former report.

The previous recommendations of the Department in regard to increasing the supply by new or additional storage, improvement of sanitary conditions on the watershed, the sterilization of the auxiliary supply from Fishkill creek, frequent inspections of the watershed, the enactment of rules and regulations by this Department, the chlorination of the upland supplies in the summer and if the yield from the upland supplies continued insufficient, the filtration and sterilization of Fishkill creek for permanent use, have not been carried out.

In a report upon the inspection of the supply dated August 29, 1921 it was recommended that the authorities in charge of the water supply carry out such of the previous recommendations of this Department as have not been acted upon.

About the middle of November, this Department was advised by the local health officer of the city of Beacon that water was being pumped from the emergency supply from Fishkill creek into the city mains and requested that a representative of this Department be sent to instruct the officials in charge as to the proper amount of chlorine to be applied to the water. Mr. Albert Howd was accordingly detailed to make an investigation and learned that the Beacon and Melzingah reservoirs had become depleted of water and that on November 3 the water was pumped into the mains from Fishkill creek.

The pumping equipment which was new, consisted of a three cycle centrifugal Worthington pump which was being operated at the rate of about 500 gallons per minute. The chlorinator for sterilizing the water was manufactured by Wallace and Tiernan and is a manually controlled solution feed chlorinator of the pulsating type.

The chlorine was being applied to the water at the rate of 0.18 parts per million parts of water which was entirely insufficient to properly sterilize the water from Fishkill creek. The amount of chlorine applied to the water was gradually increased until it was being applied at the rate of about 0.8 parts per million when a slight excess of free chlorine was obtained in the treated water. Instructions for operating the chlorinator and for making the starch iodide tests for free chlorine were given to the superintendent of water.

BOONVILLE

A reinspection of the public water supply of the village of Boonville was made by Mr. Earl Devendorf, representative of this Division, on September 13 and October 19, 1921. Previous investigations of the supply have been made by this Division in 1916 and 1918, and reports thereon published in the Annual Reports of the Department for the years 1917 and 1918, respectively.

Boonville is an incorporated village, with a present population estimated at 2,000, located in the northern part of Oneida county, 35 miles north of Utica. Practically all of the inhabitants of the village are served with the public water supply. The waterworks are owned by the village and operated under the direction of a board of water commissioners, of which Mr. C. O. Bridgman is superintendent. The water supply is derived from Kingsbury and Wolf creeks, on which impounding reservoirs have been located some two miles northwest of the village. From the reservoirs the water is delivered by gravity through the distribution system.

The inspection was made as a result of a telephone conversation with Mr. George Hodges, biologist, of Utica, who had been engaged by the village authorities to advise them. He informed the Department that the village was experiencing a shortage of water, and it would be necessary to use the Forestport feeder as an emergency supply. Water was pumped from this feeder as an auxiliary source of supply from September 4th to the 24th, inclusive. On September 13, Mr. Devendorf, of the Department, visited Boonville, in company with Mr. Hodges, and inspected the emergency pumping plant and chlorination apparatus. A steam fire engine had been borrowed from the city of Utica, and was being used to pump water into the village mains from a barrel located in the side of the canal, and which was receiving water from the feeder through a wooden conduit formed of boards fastened together by means of screws and sealed with white lead. This conduit probably was some 150 feet in length and extended across the canal and into the mouth of the feeder, in order that none of the polluted canal water would be pumped into the village mains. There was a possibility, however, of this conduit leaking through warping of the board, in which case the water from the canal itself would enter the conduit and thereby be pumped into the village distribution system. It was learned that several sewers were emptying into the canal at a short distance from the point where the barrel was located.

Liquid chlorine was being used for sterilizing the supply. A cylinder of chlorine had been placed on a pair of platform scales located alongside of the pumping plant, and the gas was being fed through a small glass bottle into the wooden barrel alongside of the suction hose. The pumping engine consisted of a single acting 5 x 8 duplex pump, and was operated at a speed of 100 r. p. m. at the time of inspection. The amount of chlorine being used had been one pound per day, as indicated by the loss in weight of the chlorine cylinder. The day previous to the inspection, however, 8 pounds had been used by the operator in charge. Without a doubt, however, a great deal of this 8 pounds had been wasted by the loss in the air. On the basis of a pound of gas per day and with the above rate of pumping, the rate of application of chlorine was approximately 0.2 parts per million, and at the time of the inspection no color was obtained by means of the starch iodide test. The rate of application of chlorine was increased by opening the control valve on the chlorine cylinder until a blue color was obtained.

Material and instructions were left with the operator for making the starch iodide test, in order that he might make frequent tests and regulate the amount of chlorine being applied at all times in accordance with the results of these tests. Later samples of raw water and treated water were collected at various points in the village.

The watershed tributary to the main supply has an area of approximately one-half square mile. There are said to be two families living on the watershed, but the houses are located well back from the stream. Some 14 acres of land in the immediate vicinity of the reservoir is owned by the village and enclosed by a substantially constructed fence. No insanitary conditions were observed within the enclosure. Above the land owned by the village, however, is pasture land on which cattle and livestock have free access to the stream tributary to the supply. At the time of the inspection, on October 19, the level of the water in the reservoir had risen somewhat, due to the recent rains, and it was thought unlikely that it would be necessary to again resort to pumping from the Forestport feeder, although the fire engine which had been borrowed from the city of Utica was still kept in the village for emergency use.

From our recent inspection it appears that the board of water commissioners has carried out the previous recommendations of this Department with respect to the installation of meters, and are at the present time still engaged in the installation of meters, in order that all services may be metered.

At the time of the inspection the plant of the Rogers Milk Corporation was inspected, where it was found that the discharge of the pump said to deliver water to the overhead tank from the feeder was cross-connected with the village supply and separated only by gate valves. The employees at the factory stated that the meter was provided with check valves, which would prevent the polluted water pumped from the feeder from entering the distribution mains by backward flow through the meter and that, furthermore, the village pressure at this point was above that maintained at the pump, since the water is pumped through an overhead open discharge into the tank and cannot build up any considerable pressure. If, however, the village pressure should for any reason be materially reduced and the gate valve should be left open, it would appear there might be some possibility of polluted water getting back through the meter into the distribution mains.

In a report on an inspection of the supply dated December 28, 1921, the following recommendations were made:

1. That the authorities in charge of the public water supply continue the careful supervision of the supply and the installation of meters on all services by which to control, as far as possible, the use of water in the village, and lessen the likelihood of any future shortage.

2. That the authorities continue the installation of the chlorination plant to sterilize the regular supply, in order that the water delivered to the consumers may be of a safe and satisfactory sanitary quality at all times.

3. That the authorities in charge of the water supply engage the services of a competent engineer to aid and advise them as to the best sources and most economical method of developing a new additional source of supply.

4. That the authorities in charge of the public water supply make a detailed investigation of the cross-connection at the Rogers Milk Corporation between the village water main and the discharge of the pump used for delivering the polluted feeder water, in order to ascertain of any likelihood of such polluted feeder water entering the distribution mains at this point, and if so to either sever this connection or provide double check valves in the line in accordance with the plans shown in the blue print accompanying the report.

BRIDGEHAMPTON

A reinspection of the public water supply of the unincorporated village of Bridgehampton, Suffolk county, N. Y. was made by Mr. Alfred Mullikin of this Division on August 8, 1921. Previous inspections of this supply have been made by us in the years 1915 and 1920 and the reports thereon published in the Annual Reports of the Department for these years.

Bridgehampton has a permanent population estimated at 1,400 all of which are served with water from the public water supply. It is located in the town of Southampton about 97 miles from New York city. The waterworks are owned and operated by J. A. Sanford & Sons, Inc., of which Mr. J. A. Sanford is president. The water supply is derived from 3 driven wells, located in a thickly populated section of the village about 2,000 feet south of the railroad station. From the wells the water is pumped into steel tanks under air pressure from which it is forced through the distributing system. The average daily water consumption could not be obtained at the time but figured on a per capita consumption of 80 gallons, would amount to approximately 112,000 gallons per day. In general the details of the waterworks system remain as described in the previous reports, with the exception that about 2,000 feet of 4-inch pipe has been newly laid and a new electric motor installed for automatically operating one of the pumps. Water from this supply is also furnished to the Long Island Railroad at a rate of about 8,000 to 9,000 gallons per day. The railroad company also has a supply of its own located about 300 feet west of the railroad station and about 50 feet north of the railroad tracks. This supply is cross-connected wih the village supply and is provided with one check valve. The Water Company wells are located in the basement of a brick building owned by the Company and consist of two 6-inch driven wells 75 and 85 feet deep respectively, and one 3-inch driven well 315 feet deep. The top of these wells terminate in the bottom of a brick pit, 16 feet below the ground surface. The bottom of the pit is of concrete over which there was about a foot of water. This water accumulates from leakage from the pumps and from two spiggots connected on the discharge line which, when used, drain directly into the pit. The accumulated water is occasionally pumped from the pit by a small rotary pump.

The village is not provided with a sewerage system, the houses being served by privies and cesspools. There are about 7 houses in the vicinity of the well, the nearest of which is about 200 feet south of the wells. The location and number of the sources of pollution are detailed in the previous report and are the same as at the time of the last inspection. The railroad supply is about 200 feet northwest of the railroad station on railroad property and consists of a brick well 8 feet in diameter and 20 feet deep. In the bottom of the well is a 2-inch casing which extends down to greater depth. In the well is a vertical piston pump above which extends a vertical connecting rod leading to a windmill supported on a wooden trussel above the well. The curbing of the well extends about 6 inches above the ground. About 100 feet southwest of the well is an earth vault privy used by the railroad employees.

In a report upon the supply dated September 7, 1921 it was recommended:

1. That the authorities in charge of the water supply cooperate with the village officials in carrying out the recommendations of this Department in that all privies within a distance of 500 feet from the wells be provided with watertight containers.

2. That precaution be taken to see that all sources of pollution within the vicinity of the plant be located, if possible, and eliminated.

BUFFALO

As a result of a request received from the Superintendent of Light Houses, requesting the certification of the Buffalo city water supply for drinking and culinary purposes on board the lighthouse tender "Crocus," Mr. Devendorf of this Department visited Buffalo on April 1st. It was learned that the pumpage has been cut down somewhat since our former inspection and the daily pumpage now runs from 100 to 125 million gallons per day. Chlorine was being applied at an average rate of approximately .24 parts per million at the time of the inspection. The condensing towers of the old Electro-Bleach Company's apparatus have been dismantled and instead a water injector has been installed by the Wallace and Tiernan Company and operates under a head of from 4 to 5 pounds. Chlorine is still being applied at the intake and the water used for operating the injector is supplied from an elevated tank. This water is pumped to the tank by means of a small steam pump. Mr. Wagner stated that the injector has been operating very satisfactorily and that they had no trouble, as formerly, due to the overflowing of the old condensing towers.

It is proposed to apply the chlorine near the Porter avenue pumping station. These plans provide for a 6-inch concrete lined well casing sunk from the ground elevation of about 580 to the top of a 9-foot intake tunnel at an elevation of about 519. Inside this 6-inch well casing it is planned to place two 4-inch channels which are joined together by means of ½-inch iron pipes forming a space through which a 1½ inch rubber hose is placed for applying the chlorine. The channels are made up in 10 foot sections with the exception of the bottom section which is 5 feet in length. The splices in the steel work are to allow for removal and a house is to be placed over the well casing and at least 10 feet head room must be allowed for in order to remove the steel sections. The total weight of the 75 feet of diffuser and steel sections will be approximately between 1,800 and 1,900 pounds. A silver diffuser is fastened to the rubber hose and has seven ½-inch outlets which are planned to face down stream. No definite steps have been taken towards installing the new chlorination apparatus at this point.

It was learned at the time of the inspection that the question of the construction of a filtration plant for the purification of the supply is receiving the attention of the city officials.

As a result of the inspection the necessary data was furnished on April 11, 1921 to the Surgeon General of the United States Public Health Service for the certification of the water supply of Buffalo.

CADOSIA

A reinspection of the public water supply of the hamlet of Cadosia in the town of Hancock, Delaware county, N. Y., was made by Mr. W. W. Young of this Division on October 27, 1921. A previous inspection of the supply was made in 1920 and a report thereon published in the Annual Report for that year.

Cadosia is located on Hawk creek at its junction with the Delaware river at a point near the village of Hancock and has a population of about 150 beside which there is a population of about 100 persons grouped around a nearby acid factory. There are two principal sources of water supply used by about 110 of the people in the hamlet, and two other sources used by the railroad. Aside from this most of the people use private wells. The supply for the hamlet is owned and operated by Mr. William F. Penny and Mr. Barber Forester. The consumption is estimated at about 5,000 gallons a day. The water from the principal one of the two springs supplying the hamlet is obtained by gravity from a covered reservoir located on the lower side of a diverting dam across a ravine. The ravine is situated in a wooded area on an uninhabited slope on the opposite side of the creek from the hamlet. Cattle are free to cross the ravine above the reservoir but due to the topography of the ground and the masonry walls of the reservoir there is little likelihood for pollution of the supply even at times of heavy runoff.

The New York, Ontario and Western Railroad obtain their drinking water from a spring and their water for locomotive and general use from Snake brook at a small dam about three-fourths of a mile above the point where the latter discharges into Hawk creek, about half a mile west of the depot. The intake on the brook supply has recently been moved up stream about one-third mile to a higher elevation and to a point where there is less danger of pollution from the adjacent highway. This little traveled road appears to be the only permanent source of pollution on the watershed of the brook which has an area of approximately one-half a square mile above the reservoir at the point of intake.

The water flows by gravity through an 8-inch main laid along the railroad to two large water tanks for supplying locomotives. One of these tanks is near the point where the Snake brook crosses the railroad, the other is about a half-mile away and just beyond the railroad passenger depot. At the point where this main passes between the depot and railroad restaurant, a tap is reported to be taken off for use in the latter.

The taps in the railroad depot are supplied by gravity through a 1½-inch pipe line from a covered spring near the top of the bank of the deep cut opposite the depot. This spring is small and not easily accessible. It lies at the foot of an uninhabited and forested side hill. Three properties in the hamlet and a yard hydrant between the depot and the water tank are also said to be connected with the pipe line from the spring.

In a report upon the supply dated December 22, 1921, the following conclusions were drawn:

1. That although the necessity for carrying out the recommendations of the previous report still exists, those recommendations have not been carried out.
2. That the water from the east spring, supplying about 35 persons in the hamlet, shows fecal contamination and is subject to pollution from surface wash.
3. That while the sanitary surroundings of the brook supply have been improved, there remain certain opportunities for serious and potentially dangerous contamination of this supply.

It was therefore recommended:

1. That the owners of the supply from the east spring raise the curbing of this spring above the level of the surrounding ground, provide drainage ditches to divert surface wash and fence and post the area surrounding the spring to prevent trespassing in the vicinity.
2. That the proprietors or lessors of the restaurant either use water from the railroad spring or provide other satisfactory supply or purification of all water used from Snake brook.
3. That the New York, Ontario and Western Railroad Company maintain their spring supply in a satisfactory sanitary condition at all times.

CAIRO

A reinspection of the public water supply of the unincorporated village of Cairo was made by Mr. W. C. Emigh, assistant engineer in this Department, on April 2, 1921.

A previous inspection of the supply was made by this Division on July 7, 1908 and a report thereon published in the Annual Report of the Department for the year 1909.

Cairo, a village with a resident population estimated at 500 persons, is located in Greene county. It is well known as a summer resort and during the summer season the population is estimated to average 1,000 persons. The waterworks are owned and operated by a water company of which Mr. Clarence E. Bloodgood is president.

The water supply is derived from an impounding reservoir located one mile west of the village. The water reaches the reservoir from a number of springs and from a small stream which is a tributary of Catskill creek. During a portion of the year, said to average about eight months, water from the former source is used exclusively. During the remaining portion of the year water from the stream is admitted to the reservoir. From the reservoir water is delivered by gravity through the distribution system.

The water company controls only a narrow strip of land around the reservoir which has been partially fenced. The land beyond the fence and on the upper side of the reservoir, draining directly into it, is unprotected and subject to pollution by those conducting farming operations and by trespassers.

The brook which furnishes an auxiliary supply has a watershed above the reservoir of approximately 2 square miles. A few hundred feet upstream from the reservoir intake is located a barn and hog yard in close proximity to the stream. At the farm owned by Mr. A. Millett about one-half mile from the reservoir is a hog yard within 5 feet of the small stream tributary to the reservoir. This stream also passes through the yard of the farm where a small pond has been formed. Barn manure is piled within 40 feet of the stream and at the time of the inspection it was noted that leachings from manure piles had pooled within a few feet of the stream and on land draining directly into it. A privy without vault or container is located within 50 feet of the stream, the drainage of which is toward the stream. The soil in this vicinity is said to be clay. On the farm of A. C. Groat, the farm house is located at a distance of 40 feet from the stream and the privy at a distance of 150 feet. Surface runoff from the vicinity of the barn and barnyard reaches the stream quickly.

In a report dated May 4, 1921, the following recommendations were made:

1. That new sources of water supply not subject to pollution be developed; that, thereafter, water from the present surface auxiliary supply be excluded from the reservoir, and that the present connection between the reservoir and the stream be removed.
2. That sufficient additional land be purchased by the Water Company to include the present sources of spring supply and the land which drains most directly into the reservoir and that this property be surrounded by a substantial fence.
3. Until compliance may be effected with recommendations 1 and 2:
   (a) That, as far as possible, all sources of direct pollution of the water of the auxiliary supply be removed and that measures be taken to guard against a recurrence of same or the establishment of additional sources of pollution.
   (b) That, in case the Water Company experiences difficulty in effectually removing sources of pollution of the auxiliary supply, they apply to this Department for the enactment of rules and regulations in accordance with section 70 of the Public Health Law.
   (c) That a lock be provided for the valve which now controls admission of surface water into the reservoir and that this valve be locked at all times when it is not necessary to admit water to the stream.

CANASERAGA

A reinspection of the public water supply of the village of Canaseraga, Allegany county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department on April 21, 1921. A previous inspection of the supply was made by this Division in 1916 and the report thereon published in the Annual Report of the Department for the year 1917.

Canaseraga is located about 15 miles northwest of the city of Hornell. The present population is estimated at 800, about 90 per cent of which is served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners of which Mr. Oscar I. Shay is president and Mr. B. J. Bennett is superintendent.

The water supply is derived from 12 springs located two miles north of the village in swampy ground at the foot of a hill. From the springs the water flows by gravity to a storage reservoir and thence to the village.

Many of the springs are not properly developed and some of the covers were in a poor condition. The springs are not fenced to prevent cattle from entering the area around them. Surface streams flow to one of the springs and it is probable that surface wash at times enters other springs.

In a report dated June 13, 1921, it was recommended:

1. That steps be taken to protect the springs from contamination by providing proper covers, a diverting ditch and such other improvements as may be found necessary.
2. That the springs be surrounded with a wire fence to keep cattle at least 50 feet from them.

CAPE VINCENT

A reinspection of the public water supply of the village of Cape Vincent, Jefferson county, N. Y. was made by Mr. N. H. Baier, sanitary inspector in this Department on April 14, 1921. Previous inspections of this supply were made by this Division in 1909 and 1918 and the reports thereon are published in the 30th and 40th Annual Reports of the Department respectively.

Cape Vincent is located on the St. Lawrence river about 25 miles west of the city of Watertown. The present population is 1,100, practically all of whom are served by the public water supply. The waterworks are owned by the village and are under the control of a board of water commissioners, of which Mr. Aaron Seeter is president and Mr. E. B. Seebert is superintendent. The water supply is derived from the St. Lawrence river and pumped directly into the mains, the surplus over the consumption flowing into an open steel standpipe.

The seriously polluted condition of the St. Lawrence river has been pointed out to the village authorities in the past and they have been urged to properly filter and chlorinate the supply before it is delivered to the consumers. At the time of the last investigation it was learned that no action has been taken by the village authorities to carry out our recommendations, although the need for them is still urgent.

In the report dated April 25, 1921 the following conclusions were drawn:

1. That the public water supply of the village of Cape Vincent is unsafe for human consumption.
2. That our recommendations relative to the sterilization of the supply have not been carried out.

It was therefore recommended:

1. That the authorities in charge of the public water supply take immediate steps to install a chlorination plant.
2. That chlorine be applied only to the water in sufficient quantity to effectively sterilize it and that frequent tests be made of the chlorinated water for excess chlorine and the rate of chlorine regulated in accordance with these tests.

CATSKILL

A reinspection of the public water supply of the village of Catskill was made by Mr. Emigh, assistant engineer in this Department, on April 4, 1921. Previous inspections of this supply were made by this Division in 1913 and 1918, and reports thereon published in the Annual Reports of the Department for those years.

Catskill, a village with a population of 5,371, is located in Greene county on the west bank of the Hudson river about 32 miles south of Albany. Practically all of the population are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners of which Mr. P. G. Coffin is president.

The water supply is derived from the Hudson river, is chlorinated and is pumped into a reservoir located on high ground within the village limits. From the reservoir the water is delivered by gravity through the distributing system. The average daily consumption for the year ending March 1, 1921, was 888,324 gallons representing a daily per capita consumption of 165 gallons computed on the basis of the population reported in the 1915 census. In general the details of the waterworks system remain as described in previous reports.

Apparatus for the application of hypochlorite of lime as a disinfectant is installed in a room adjoining the pump room. The hypochlorite solution is applied in the suction of the pump. The apparatus is in duplicate and each unit consists of a mixing tank, a solution tank, an air tank, an orifice tank and excessory piping. The hypochlorite is made up into a heavy milk in an iron barrel. From there it is dipped in a pail into the mixing tank which is of wood. In the mixing tank, which is provided with an agitator, the milk is diluted and a solution of hypochlorite formed. From the mixing tank it is discharged by the opening of a valve into the solution tank. The application of the solution to the water supply is dependent upon the flow of water from an orifice tank. The level in the orifice tank is controlled by an adjustable overflow. The water passing out of the orifice tank through the orifice is piped to an air tank the top of which is connected by piping to the solution tank. As the orifice tank is elevated above the solution tank the water passing into the air tank displaces the air in the tank and forces it through the air piping to the top of the solution tank where it, in turn, forces the solution out of the tank. The outlet of the solution tank is in the bottom but rises to an elevation above the top of the tank and leads to the point at which the hypochlorite solution is introduced into the water supply.

The waterworks superintendent, who accompanied our engineer, informed him that 100 pounds of hypochlorite is used per 96-hour week of pumping. On the basis of the daily average consumption a rate of application of 1.94 parts of hypochlorite per million parts of water is indicated. The superintendent stated that it was not customary to make tests of the available chlorine in the hypochlorite purchased, nor to specify the quality to be furnished. In view of this condition it is impossible to determine from data at hand the rate of application of chlorine. A good commercial quality of hypochlorite may be expected to contain 30 per cent of available chlorine in which case the application of chlorine in this instance would be 0.58 parts per million. There is, however, no assurance that the hypochlorite is of such quality and the actual available chlorine may be considerably less. In order that effective disinfection may be obtained at all times all hypochlorite should be purchased under specifications calling for at least 30 per cent available chlorine, and sufficient tests should be made to afford a fair assurance that such quality of hypochlorite is delivered. In addition the treated water should be tested daily for excess chlorine in accordance with the instructions issued by this Department and in order to assure disinfection an excess should be maintained at all times.

The watershed tributary to the supply is approximately 9,300 square miles and the supply is subject to direct pollution from approximately 500,000 people and to indirect pollution from about 600,000 people. It is obvious, therefore, that the water is at all times grossly polluted and generally infected. This conclusion is verified by the records of typhoid fever cases and deaths in the village of Catskill, as compared with the rates in New York State. Records indicate that the Catskill rate has at all times been above the average rate throughout the State. Although, subsequent to the installation of the hypochlorite apparatus in January, 1914, there has been a marked decrease in the typhoid rate in the village, it is to be noted that it continues considerably higher than the state rate. Investigations have been made of the persistence of typhoid in the village, and in general it appears that the water supply has been the primary and most frequent cause. This condition emphasizes the necessity of effective disinfection, as long as the river supply is used, and points to the desirability of the filtration of the present supply, or to the acquisition of a new supply of higher quality.

A considerable number of village residents, estimated at about 10 per cent of the total population, obtain drinking water from a spring supply. The spring is privately owned, but a nominal sum is paid by the village annually to the owner for the use of the water therefrom. The spring is located in a vacant lot bounded by High street, Walnut avenue and Cedar street. It is at a distance of 1,100 feet from the distributing reservoir of the river supply, and at an elevation about 80 feet lower than that of the water surface in the reservoir. It has been developed by the construction of a concrete chamber with a concrete floor and a plastered brick arched roof. Access is afforded by a manhole in the top of the roof, which is protected by a heavy wooden cover secured by bolts. The chamber is well designed and constructed, and appeared to be subject to no permanent sources of direct pollution. The water is piped to 3 drinking fountains, 2 of which are located on the main street of the village, and is also said to be piped to the village school building. The street drinking fountains are fitted with both faucets and nozzles. The nozzles produce vertical jets only about ½ inch in height and not sufficient to assure a reasonable protection of the fixtures from the lips of the drinkers.

In a report on an inspection of the supply dated April 20, 1921, the following recommendations were made:

1. That a suitable treatment plant for the purification of water from the present source of supply be installed and placed in operation at the earliest possible date, or that a new source of supply of satisfactory quality be developed.
2. That, pending the construction and completion of a treatment plant or a new supply as recommended above, every precaution be observed to so operate the present equipment as to reduce the danger of water-borne disease to a minimum.
    (a) That the application of chlorine be continued and the rate of application be controlled by testing the treated water daily in accordance with the instructions of this Department for excess chlorine and by maintaining an excess in the treated water in order to assure adequate disinfection.
    (b) That in the purchase of hypochlorite an available chlorine content of 30 per cent be specified, and that analyses be made of each shipment of hypochlorite received at the plant in order to determine the quantity of available chlorine actually present.
3. That fixtures be provided for the existing street drinking fountains, which will throw a jet of water to a height of at least one inch above the nozzle.

A later inspection of the water supply of Catskill was made on September 8, 1921, at which time it was learned that a new intake chamber had been constructed and that an apparatus for the application of liquid chlorine to the raw water had been installed, and that the old apparatus for sterilizing the supply with hypochlorite of lime had been dismantled.

The new intake chamber is constructed of concrete 5½ feet square and 12 feet deep, and is provided with two 20-inch sluice gates and inserts for 4-inch mesh vertical screens. The chambers are located on the side of a quay wall about 10 feet below the surface of the ground. The new chlorinators, which are in duplicate, are manual control solution feed types of apparatus, manufactured by Wallace & Tiernan Company. The rate of application of chlorine at the time of the inspection was 5.7 pounds per million gallons, and in making tests for excess chlorine in the water by the starch iodide method it was found necessary to increase this rate to 10 pounds per million gallons before a reaction from the test was obtained.

In a report on the inspection of the supply dated September 27, 1921, the following recommendations were made:

1. That the application of liquid chlorine be applied to the raw water in sufficient quantities to properly sterilize the supply, and that the rate be regulated in accordance with the results of daily tests for excess chlorine in the water made in accordance with the directions furnished by this Department at the time of the inspection.

2. That a careful patrol be made over the watershed of the village spring to detect and eliminate, if possible, all sources of pollution; by surrounding the area of the spring with a fence to prevent animals or human beings from coming in the immediate vicinity of the spring and causing accidental, incidental or wilful pollution of the supply; by constructing ditches to divert surface wash which may enter the supply, and until such analyses show this source of supply to be free from active contamination, that its use be abandoned as a drinking supply.

CENTRAL VALLEY

A reinspection of the sanitary condition of the public water supply of the villages of Central Valley and Highland Mills was made by Mr. W. J. Erickson, sanitary inspector, on March 16, 1921. Previous inspections were made of this supply in 1911 and 1915, reports upon which are published in the Annual Reports of this Department for the respective years.

The two unincorporated villages, Central Valley and Highland Mills, have each a population of about 590. They are located in the eastern part of Orange county, about 15 miles southwest of Newburgh. These villages are not provided with public sewer systems. Practically the entire population of the two villages is served by the public water supply which is owned by the Commonwealth Water Company, of which Mr. W. M. Imbrie is president. The supply is regularly derived from Cromwell lake, located about two miles west of Highland Mills. It flows by gravity from the lake to a slow sand filter, from which it continues to the village. There is no method of determining the daily consumption. At times the supply is augmented by using the water from an artificial pond known as Earls pond. The water from this pond is supplied to the Erie railroad for filling locomotive tanks and is seldom supplied to the consumers on account of the stagnant condition of the pond during the summer months.

The filter consists of a concrete tank, 80 by 100 feet in plan and 20 feet deep. It is subdivided and the valves so arranged that either or both sections of the filter may be put into operation. The filtering medium consists of about 2½ feet of sand over a layer of gravel. The filtered water is collected by means of tile underdrains, which conduct it to the effluent main emptying into a clear water basin 15 feet by 40 feet in plan, from which it passed to the distribution system. About 10 feet head is maintained over the filtering medium. The filter is cleaned by scraping the top layer of sand. During the winter months the filter is not used, as the watershed is then practically unoccupied. The filter was not in operation at the time of the inspection, but it was said that it would be put in operation as soon as it had been cleaned. Since the water is at all times subject to accidental pollution, it is important that the filter be operated continuously, being covered, if necessary, to prevent freezing in winter.

Cromwell lake is protected by rules and regulations enacted by this Department and these rules are rigidly enforced. There are but six houses on the watershed, with a permanent population of 6. In summer, however, this is increased to about 150, due to the influx of summer boarders. The cesspools of these places, with one exception, are tight and kept in a sanitary condition. Inspections to determine violations of the rules and regulations are made regularly. Ice cutting is carried on under the supervision of an inspector from the water company. Signs have been posted warning visitors against contaminating the supply.

One source of pollution is the overflow of the cesspool of the Cromwell Lake House, which has a summer population of about 125. This cesspool is located about 450 feet from and 50 feet higher than the lake. It is said that the condition of this cesspool is very objectionable during the summer and frequently clogs and overflows. This overflow could be traced for a considerable distance below the cesspool. It would seem advisable that the proprietor construct a new disposal plant of adequate capacity and constructed on the side of the divide away from the lake. This would not only protect the public water supply, but would also rid the vicinity of the disagreeable odors which must arise from the present inadequate means of disposal.

Earls pond is developed by the construction of a masonry dam across a brook flowing down from Schunemunk mountain. The pond so formed is about 500 feet wide, 1,500 feet long and 6 feet deep. The area tributary to the pond is about half a square mile and is occupied by only one farm, with a total population of 3. The wash from the road leading to the farm is diverted to a point below the reservoir by a ditch. The water from this source is seldom supplied to the consumers on account of the fact that it becomes very stagnant during the summer months.

In a report upon an inspection of the supply dated April 8, 1921, the following conclusions were drawn:

1. That the regular supply derived from Cromwell lake is, during the winter months, when the watershed is practically uninhabited, of fairly satisfactory sanitary quality, though the influx of pleasure seekers during the summer months renders it unfit for human consumption in its raw state.
2. That the efficiency of the filter has not been fully determined.
3. That the supply derived from Earls pond is of satisfactory sanitary quality, though it is depreciated physically due to the development of algæ growths.

It was therefore recommended:

1. That the water company continue its careful supervision of the watershed and rigid enforcement of the rules and regulations.
2. That the filter be used at all times and that an engineer be employed to study the efficiency of the plant and to advise them as to the most practical means of making the method of treatment effective.
3. That, if found necessary, the filtration be supplemented by sterilization with liquid chlorine.
4. That they continue the use of copper sulphate in order to control the growth of algæ.
5. That, in order to improve the physical quality of Earls pond, the reservoir bottom be stripped and the water be regularly treated with copper sulphate in order to prevent the growth of algæ and miscroscopic organisms.

CHATHAM

A reinspection of the public water supply of the village of Chatham was made by Mr. W. J. Erickson, sanitary inspector in this Department, on December 2, 1920. Previous inspections were made by this Department in 1911, 1918 and 1920.

Chatham, which is an incorporated village of about 2,700 inhabitants, is located in the north central part of Columbia county, 22 miles southeast of

Albany on the Boston & Albany railroad. There are no public sewers in the village, privies and cesspools being in general use. The public water supply is owned by the village and is operated under a board of trustees of which Mr. W. P. Pratt is president.

The water supply is derived from the Palmer dug well, located in the western part of the village. The water is pumped from the well into the distribution system. The average daily consumption is about 400,000 gallons, of which the railroads use about half. The regular supply is supplemented by pumping from 20 driven wells, known as the Blinn wells, located in the southern part of the village. The Palmer well is located between the Boston & Albany railroad tracks and Smith's pond. A cesspool located 300 feet from and at a higher elevation than the well appeared to be in a satisfactory condition at the time of the inspection.

The Blinn well supply consists of twenty 2-inch driven wells arranged in pairs averaging 32 feet in depth. A valve pit is provided for each pair of wells, each pair being connected to a 10-inch suction main.

In a report dated January 13, 1921, the following recommendations were made:

1. That in order to safeguard the sanitary quality of the public water supply the village install a comprehensive sanitary sewer system as soon as possible and cesspools, privies and other sources of contamination in the vicinity of the wells be removed.
2. That the Blinn pumping station be put in a satisfactory operating condition so as to be ready for any emergency.
3. That the authorities continue to maintain the grounds surrounding the wells in a clean and sanitary condition.

CHAUTAUQUA COUNTY TUBERCULOSIS HOSPITAL

An inspection of the condition of the water supply at the Newton Memorial Hospital at Cassadaga, Chautauqua county, N. Y., was made by Mr. Henry Ryon, assistant engineer in this Department, on April 8, 1921.

The Newton Memorial hospital is located on the eastern slope of a hill at a distance of about 2,000 feet west of and 150 feet above the upper Cassadaga lake. The soil on the hillside is a heavy loam with a subsoil of clay underlain by shale. The capacity of the institution is about 82 patients and 28 employees. There were, however, only about 40 persons at the hospital at the time of the inspection.

Plans for water supply and sewage disposal for the hospital were approved by this Department on August 12, 1918. The water supply was, according to these plans, to be obtained from a 6-inch drilled well about 150 feet deep, located on the hill some 300 feet west of the institution, and the sewage was to be disposed of by means of settling tanks and intermittent sand filters.

The well from which the water supply of the hospital was to have been obtained is located about 300 feet west of the institution building. This well was said to be 6 inches in diameter, drilled through about 30 feet of clay and 110 feet of shale rock to a total depth of approximately 140 feet. According to information furnished to this Department this well yielded about 20 gallons per minute on continuous pumping. The territory above the well is entirely unpopulated and there are apparently no permanent sources of pollution upon it.

This well is not being used, a second well having been drilled at approximately the same depth about 175 feet nearer the hospital. So far as can be determined there is no record of the location of the second well having been approved by this Department. From such information as could be obtained it seems that the first well was abandoned because it was thought to be polluted. Attention was called by those in charge of the hospital that running water could be heard in this well. This is undoubtedly due to leakage into the well at a point about 30 feet below the surface where the casing joins the rock or possibly a split in the pipe caused by excessive driving, as suggested by the well digger. This leak provides additional water and there seems to be no reason why this water from the upper strata should be excluded, for, as stated above, there is no apparent source of pollution on the watershed.

The second well is developed in accordance with the plans approved for the first well. These plans provided for a small concrete house about 8 feet square to protect the well and pumping machinery. The basement of the building extends about 5 feet below the surface of the ground, the casing of the well projecting 2 or 3 inches above the floor of this basement. A drain is provided for carrying off any water which may fall upon the floor. This drain was stopped up and there was some 2 inches of water on the floor of the pit, undoubtedly polluted to some extent by men working on the board floor at ground level around the pump. A rise of a fraction of an inch more would have allowed this water to flow into the well. When this condition was brought to the attention of the superintendent of the institution he immediately started excavating the drain in order to repair it or clear it of obstructions.

The yield of the well now in use is insufficient for the needs of the institution, even with its present population of less than one-half of its capacity. The pump is said to have a capacity of 22 gallons per minute but cannot be operated for more than 15 minutes at a time without taking air. A large part of the water obtained from the well is apparently used for cooling the refrigerating apparatus, which uses about 1,500 gallons per hour and is operated at present about 2 hours per day.

It would seem desirable that these wells should be carefully tested for capacity and also for the purpose of determining whether or not they both tap the same water bearing strata. This can probably best be done by temporarily altering the gears of the pump so as to reduce its capacity to the limit of the yield of the well and observing the water elevation in the well for several days during continuous pumping. The elevation in the first well should be observed during this test and a record made of it after the pump has been idle for as long a period as possible and at definite times during the continuous pumping. By this means the influence of the second well on the first may be determined. If the pumping on the second well does not materially influence the level of the water of the first well the first well should also be tested by the installation of a pump and continuous pumping in the same manner as suggested for the second well.

If these wells, as seems possible, from their location and the apparent available watershed, will not yield a sufficient quantity for the needs of the institution, other sources of water supply must of course be considered. It seems possible that a better flow of water might be obtained by sinking a well, preferably a dug well several feet in diameter, in the valley lying southwest of the institution, which valley apparently has a considerable larger watershed than the wells above the institution. If the quantity of water needed is only slightly greater than the yield of the present wells, as determined by test, it might be possible to supplement the supply by water from similar wells drilled near the present ones but at a sufficient distance from them to avoid material interference. The area north of the present wells apparently offers the best location for such additional wells.

It is, of course, possible also to obtain water from Cassadaga lake for use in connection with the refrigerating machine and perhaps for fire protection and some other purposes. This would mean the installation of a dual system with the consequent possibility of water from the wrong system being used for drinking and culinary purposes. Such systems cannot usually be recommended and if installed should be entirely separate and the one carrying water unsuitable for drinking and culinary purposes, as the water from Cassadaga lake would be, arranged so that it would be impossible to obtain water at any point for such purposes. Consideration might also be given to cooling the water from the refrigerating machine and using it over again as is done in some installations. Another possible solution of the problem would be to obtain water from the public supply of the village of Lillydale.

Samples of water for chemical analysis were taken from both wells at the time of the inspection and samples for bacteriological examination were taken from well number 2, the condition of well number 1 precluding the possibility of taking of satisfactory samples for bacteriological examination from that well. The results of the examination of samples by the Division of Laboratories and Research are given in the appended table.

The results of the chemical examination of the samples show nothing to indicate that either well was receiving pollution of a possibly dangerous character. The high turbidity and the high figures for albuminoid ammonia and oxygen consumed given in the results of the analyses of the water from well number 1 are undoubtedly due to the fact that the well is not protected from the entrance of small quantities of vegetables and other organic matter and to the fact that it was necessary to take the sample by lowering a vessel into the well, an unsatisfactory method which undoubtedly scraped some material from the sides of the well and caused it to fall into the water. The considerable variation in the chlorine content and the alkalinity of the waters of the two wells is without doubt due to the fact that they are obtained from different strata for, as pointed out above, a considerable portion of water from well number 1 apparently comes from the upper strata of ground and enters the well about 30 feet below the surface where the casing joins the rock. The high chlorine content is undoubtedly derived from mineral sources as is common in wells in this vicinity and of no sanitary significance. The bacteriological examination of the samples from well number 2 show low bacterial counts and the absence of colon bacilli in all of the inoculations tested, indicating that the water was apparently free from active contamination at the time the samples were taken. Since the two wells are close together and subject to similar conditions, the upper one being if anything less liable to pollution, it seems probable that with proper protection the water from well number 1 will show the same freedom from bacteria as well number 2.

In a report upon an inspection of the supply dated April 14, 1921, the following recommendations were made:

1. That the drain from the pit over the present well be repaired and arranged to keep the pit free from water.
2. That both wells be carefully tested for capacity and interference.
3. That consideration be given to securing an additional source of supply either from additional wells of similar character drilled near the present one, from a dug well in the valley southwest of the institution, from Cassadaga lake or from the water supply of Lillydale and to the conservation of the supply by cooling and using over again the water from the refrigerating machine, observing in all cases the precautions pointed out in the body of the report.

CHERRY VALLEY

An investigation of the public water supply of the village of Cherry Valley, Otsego county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on May 11, 1921. Previous investigations of this supply were made in 1908 and 1916, and the reports published in the 29th and 38th Annual Reports of the Department, respectively.

Cherry Valley is an incorporated village of some 750 inhabitants located in the northeastern portion of Otsego county. There is no public sewer system in the village and the houses are served by privies and cesspools. The water supply is owned by the village and operated under a board of water commissioners, of which Mr. Seth Pearson is president. The public supply is mainly derived from a small stream impounded in a storage and distributing reservoir located about one mile east of the village center. In addition, a smaller reservoir was constructed to collect the water from a small watershed and from a spring flow. This reservoir serves as an auxiliary source of supply whenever it is necessary to clean the main reservoir, or at times when the main supply is turbid after a heavy rainfall. The water consumption is unknown, but is estimated to be approximately 70,000 gallons per day.

The watershed of the small reservoir consists of some 15 acres of land used entirely for cultivation, and is free from any permanent sources of contamination. The watershed above the main reservoir is approximately 2.4 square miles in area and consists mainly of farming land, on which there are 8 dwellings. At the Yeardon place, however, about 1½ miles above the reservoir, the barn buildings are located close to the stream. The contamination of the supply is from surface wash from barnyards, pastures and cultivated fields. The watershed is protected by rules and regulations enacted by this Department in 1897. About 10 acres of land surrounding the main reservoir are owned by the village and inclosed by a fence. Ice is still cut at the reservoir during the winter time under the supervision of the board of water commissioners. It was stated that there are no other available sources of ice in the vicinity of the village.

The recent inspection disclosed that the conditions existing on the watershed were practically the same as described in the former report. A new spillway, however, has been constructed at the main reservoir. A mineral spring, the flow from which is available to the residents and visitors of the village at a fountain located in the center of the village, is used. The spring itself is located about one-half mile southeast of the village and is apparently free from any opportunities for contamination.

In a report on an inspection of the supply dated June 13, 1921, the following recommendations were made:

1. That, as previously pointed out, the village authorities install and operate some satisfactory means of purification, employing a competent engineer to advise them.
2. That the village authorities in charge of the public water supply rigorously enforce the rules and regulations enacted by this Department for the sanitary protection of the public water supply, in order that no insanitary conditions may be allowed to exist on the watershed.
3. That ice cutting upon the reservoir be abandoned.

CLIFTON SPRINGS

An investigation of the public water supply of the village of Clifton Springs was made by Mr. Earl Devendorf, assistant engineer in this Department, on December 10, 1920. A previous investigation of this supply was made in 1913 and a report thereon may be found on page 443 of the 34th Annual Report of the Department for that year.

Clifton Springs is an incorporated village in the northern part of Ontario county about 10 miles west of Geneva. The population is said to be approximately 1,600 inhabitants, exclusive of guests at the Clifton Springs sanitarium, who number some 250 or 300 persons.

The public water supply is derived from a series of springs located approximately 5 miles south of the village. From the springs the water is carried to two small collecting wells from which it is led to a distributing reservoir located at the top of a hill about one mile south of the village. The public water supply is operated by a board of water commissioners, of which Mr. L. E. Martin is president. There are 12 springs located along the slope on the edge of an old cedar swamp, partly covered with second growth timber. The north spring, or Spring No. 1, consists of four 2-foot vitrified tile sunk in the earth, in which there was approximately 2 feet of water. It is estimated that the flow from this spring was, roughly, about 1,000 gallons per hour. The top of the tile extended some 3 feet above the surface of the ground. The earth surrounding the tile was banked up to prevent any surface wash from entering the springs. The tiles themselves, however, were simply placed on top of one another and no concrete provided to make the joint watertight, thus providing opportunities for any surface wash to enter by filtering through the small amount of earth surrounding them. Spring No. 2 is located about 50 feet south of Spring No. 1 and is constructed in a similar manner. The flow from this spring is estimated at approximately 1,500 gallons per hour. Spring No. 3 is approximately 10 feet in depth, has about 5 feet of water and is located some 75 feet south of Spring No. 2. The flow from Spring No. 3 is estimated at approximately 1,200 gallons per hour. Spring No. 4 is located some 100 feet south of Spring No. 3, is 4 feet in depth and there is approximately 2 feet of water in the spring. The flow from this spring is estimated at 400 gallons per hour. Spring No. 5, which is located about 50 feet south of Spring No. 4, is 4 feet in depth and has 2 feet of water. The flow from this spring, together with that of Spring No. 6, is estimated at 300 gallons per hour. Spring No. 6 is 6 feet in depth and has approximately 3 feet of water. A broken tile was observed in this spring giving an opportunity for pollution to enter. Spring No. 7 is about 50 feet south of Spring No. 6, is 8 feet in depth and has approximately 4 feet of water. The flow from this spring is estimated at 800 gallons per hour. Spring No. 8 and Spring No. 9 are located approximately 30 feet apart and 50 feet south of Spring No. 7. Both Spring No. 8 and Spring No. 9 are about 6 feet in depth and each have approximately 2 feet of water. The flow from the springs is approximately 500 gallons per hour. Seventy-five feet south of Spring No. 7 is Spring No. 10, which is approximately 8 feet in depth and has 4 feet of water. The flow from this spring is estimated at 1,000 gallons per hour. Spring No. 11 is 3 feet in depth and has some 2 feet of water. The flow from this spring is, however, rather small and it would appear that the flow might be augmented if properly developed by sinking the tile at a lower depth. Spring No. 12 is 6 feet in depth and has some 4 feet of water. The flow from this spring could not be estimated and was unknown. The total flow of the springs as gauged by the authorities in charge of the public water supply is therefore about 165,000 gallons per 24 hours or approximately 100 gallons per capita per day.

At the time of the inspection approximately 425 feet of 4-inch cast-iron pipe was being laid to collect the water from Springs Nos. 1, 2 and 4, inclusive, and carry it to a small collecting basin located between Springs Nos. 3 and 4. Spring No. 3 had been developed by the construction of a wooden curb and stones placed in the bottom and around the sides and had been only partially filled in on the bottom surrounding a 2-foot vitrified tile pipe which it is planned to carry up above the surface of the ground and then cover. The flow of Springs Nos. 4 to 12 are led through 4-inch tile drains to a 4-inch cast-iron collecting main leading to the small collecting basin. It is not planned at this time to replace these tile collectors. The engineer was informed at the time of the inspection that the tile underdrains had been originally laid some 23 years ago. The location in which these drains are laid consists of a swampy land. The tile drains already taken up have been found to be almost entirely filled with roots and in many places have been cracked and broken, due to the roots entering the drains thus giving rise to opportunities for the surface wash to enter the public water supply.

In view of this experience and on account of the nature of the soil in which the collecting tiles are laid, the village authorities in charge of the public water supply should replace the present tile collectors at the earliest possible time with cast-iron collectors which will prevent the entrance of surface wash into the public water supply as well as provide additional carrying capacity of the collector lines.

At the time of the inspection the engineer was informed that some 4 additional acres have been purchased from the farmer on the southwest which will afford greater protection from surface wash entering the spring. The total watershed area owned by the village now consists of 12 acres. At the time of the inspection no actual opportunity for direct contamination was noticed in the vicinity of the springs.

In a report upon an inspection of the supply dated January 13, 1921, the following recommendations were made:

1. That, in accordance with the previous recommendations of this Department, the village authorities in charge of the public water supply of Clifton Springs replace the tile underdrains with cast-iron collectors at the earliest possible date in order to exclude the possible entrance of surface wash into the spring flow.

2. That the entire property owned by the village be enclosed in a tight fence and properly posted to prevent trespassing and possible contamination of the public water supply by accidental, incidental or wilful pollution of the water or ground by visitors or trespassers on the watershed.

COHOCTON

A reinspection of the public water supply of the village of Cohocton, Steuben county, N. Y., was made by Mr. Alfred Mullikin assistant engineer in this Department on December 13, 1920. A previous inspection of this supply was made by this Division in 1917 and a report thereon published in the Annual Report of the Department for that year.

Cohocton is located in the northern part of Steuben county about 50 miles south of Rochester. The present population is estimated at 900, practically all of which are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of trustees of which Mr. Fred W. Snyder is president and Mr. Erve Wagner is superintendent.

The water supply is derived from several springs located from 1 to 2 miles west of the village and from three driven wells located near the railroad station in the village. The water from the springs flows by gravity to the village, while the water from the wells is pumped directly into the distribution system.

The three springs which are farthest west of the village are located in a cattle field on which considerable sheep manure exists. The springs are provided with wooden covers and are satisfactorily protected from surface wash. The fourth spring located on the south bank of Reynolds creek is loosely constructed of stone. The spring is provided with a wooden cover but is practically on a level with the stream and is probably flooded during times of high water. The fifth spring is located near a farm house. A manure pile is located within 60 feet of the spring.

There are three driven wells located in a thickly populated section of the village. There are three very insanitary earth vault privies and one horse stable within 200 feet of the wells. There are about 15 buildings within 500 feet of the wells, most of the buildings having earth vault privies.

In the report dated February 10, 1921, it was recommended:

1. That the springs and collecting basins be provided with suitable walls, curbs, embankments and ditches to protect them from surface wash and creek water.

2. That, if it is found impracticable to protect any of the springs from creek water, these springs be abandoned.

3. That the village authorities purchase sufficient land around the springs and collecting basins to properly protect them and that this land be fenced so as to prevent trespassing.

4. That, all privies and cesspools within 300 feet of the wells be made watertight and maintained in a satisfactory sanitary condition.

5. That, if it is found impracticable to free the water from all pollution by carrying out these recommendations, the water be treated with liquid chlorine or a new source of supply developed.

COLONIE (Delaware & Hudson Shops)

A reinspection of the water supply of the Colonie railroad shops of the Delaware and Hudson Company in the town of Colonie, Albany county, N. Y., was made by Mr. A. I. Howd, of this Division, on October 7, 1921, as the result of an outbreak of typhoid fever among the employees of the shops.

The Delaware and Hudson railroad shops are located a short distance southwest of the city of Watervliet, and employ at present about 800 persons from cities in the immediate vicinity. The shops are provided with a water supply derived from four sources, namely: the public water supply of the city of Watervliet, a large dug well, the Hudson river and a bottled water supply. The sewage from the shops is discharged into the sewer system of Watervliet.

The water supply obtained from the city of Watervliet is derived from the Normanskill, about 14 miles west of the city. The supply is subjected to filtration and chlorination before being delivered to the consumers. A city water main passes through the shop yards, and to this main a connection has been made. This water supply is the principal drinking water supply of the shops, is used for filling drinking water tanks on passenger coaches and diners, and in addition is used for supplying water to a number of toilets and for other purposes.

The dug well supply is derived from an open well about 60 feet in diameter and about 40 feet deep. The water from this well when used is pumped into an elevated wooden tank, from which it flows by gravity through a distribution system. The pumps are located in a small shed situated partly over the well. The well is located in a low spot in the southwestern part of the shop yards, and, although the concrete casing of the well extends about 2 feet above the ground, surface water may run down around the casing and through openings into the well. This supply was formerly used for potable purposes and for filling drinking water tanks on coaches and diners. It is now maintained as an emergency source of supply for industrial purposes. The use of the dug well supply for potable purposes was discontinued on or about June 8, 1921, upon the recommendation of this Department.

A third water supply is obtained by pumping from the Hudson river. A pumping station is located at the river, from which the water is pumped into a circular steel storage tank at the shops. The water flows from this tank through a main to the boiler house, where the water is pumped by a booster pump into the mains to provide higher pressure. This supply is used for industrial purposes, for fire protection, to supply taps at wash bowls, and for flushing closets in some of the toilet rooms.

A small section of the shops is furnished with a bottled water supply known as the "Standard Springs Bottled Water," obtained from H. Prediger, Troy, N. Y.

In the basement of the boiler room cross-connections exist between the three main water supplies, namely: the Watervliet supply, the Hudson river supply, and the dug well supply. The 3-inch main of the Hudson river supply runs along the floor of the boiler room. At a certain point on the main a riser is provided, which has a 3-inch gate valve a short distance above the floor. This gate was closed at the time of the inspection. To this riser are connected the dug well supply main and the Watervliet supply main. On the city supply main a 2-inch Globe gate valve is provided, which was closed and sealed at the time of the inspection. A pump is located near the cross-connection by which water from the dug well supply may be pumped into either the city main or the Hudson river main by opening the proper gate. By opening both gates the Hudson river water may discharge or be discharged into the city mains, or vice versa, under certain conditions.

An outbreak of typhoid fever occurred between July 24 and August 14 among employees of the Delaware and Hudson shops living at Green Island, Troy and Watervliet. There were 9 cases among employees working at different points in the shop. Investigation by the sanitary supervisor of the district disclosed the fact that different milk supplies and water supplies were used by the cases at their homes and that the only thing in common use by all was the water supply of the shops.

Samples of water were collected at the time of the inspection and sent to the Division of Laboratories and Research for analysis. The results of the analysis of these samples may be found in the appended table.

The results of the analyses of the sample collected from a tap supplying Watervliet city water in the basement of the boiler room show a water clear, colorless and hard. The figures for albuminoid and oxygen consumed are high and indicate the presence of relatively large amounts of decomposable organic matter. The figures for nitrogen in its other forms are moderate. The total bacterial counts are low, but the presence of organisms of the colon group in all the 10 cc. and 1 cc. volumes tested indicates that the water was actively contaminated and unsafe for human consumption. The results of the analysis of the sample collected from the discharge of the pump at the dug well show a very high figure for chlorine, high total bacterial counts and the presence of B. coli in all 10 cc. volumes tested. These results indicate that this supply was polluted and unsatisfactory for use for potable purposes. The results of the analysis of the sample collected from a tap over a wash bowl in the car department toilet, which tap is supplied by Hudson river water, show a very high total bacterial count and the presence of organisms of the B. coli type in all volumes tested, indicating that the water was seriously polluted. The results of the analysis of the sample collected from a tap used for filling the water tanks on the coaches and diners showed a water clear, colorless and hard. The figures for albuminoid ammonia and oxygen consumed are high and indicate the presence of relatively large amounts of decomposable organic matter. The figures for nitrogen in its other forms are moderate. The total bacterial counts are moderate, but the presence of organisms of the B. coli type in all volumes tested indicate that the water was actively contaminated and unsatisfactory for potable purposes.

As a result of this inspection it appeared that the outbreak of typhoid fever among the employees of the Delaware and Hudson shops at Colonie was probably due to the unsatisfactory condition of the water supply at the shops. It is possible that infection may have occurred from drinking polluted Hudson river water from taps located at various points in the shops, or from drinking city water mixed with polluted Hudson river water which may have entered the city water mains through defective or improperly closed gate valves at the existing cross-connections, or through such valves carelessly or wilfully left open by employees.

In a report upon the inspection dated October 25, 1921, the following recommendations were made:

1. That the Delaware and Hudson Company immediately effect a severance of all connections between mains carrying water for drinking purposes and those carrying polluted water for industrial purposes, or provide properly arranged double check valves, gates and gauges, acceptable to this Department, installed in a suitably constructed manhole located at a convenient and readily accessible point outside of any building and near the municipal main.
2. That furnishing polluted Hudson river water to taps, where it is intended to be used by employees for washing purposes, or where it may be used for drinking purposes, be discontinued.

COOKS FALLS

A reinspection of the public water supply of Cooks Falls was made by Mr. W. J. Erickson, sanitary inspector in this Department, on May 11, 1921. Previous inspections of the supply were made in 1908 and 1916 and reports thereon were published in the Annual Reports of the Department for the respective years.

Cooks Falls is an unincorporated village in the southeastern part of Delaware county about 140 miles northwest of New York city. The village has a population of about 300 in winter and about 600 in summer. The public water supply is owned by Mr. George I. Treyz. There is no public sewer system in the village. The public water supply is derived from two small brooks. The intake of one is located about a mile southeast of the village and the intake of the spring brook supply is about a mile west of the village. The water flows from the southeasterly brook to a storage tank located on the O. & W. railroad which uses the major portion of the water derived from this supply. The excess over the amount used by the railroad is delivered to the village. The water from the spring brook goes direct to the village distribution system.

The brook supplying the railroad has a watershed tributary to the reservoir of about 2 square miles. There are but three occupied houses on the watershed. Two of these are at the upper end of the watershed about 2 miles from the intake and at a considerable distance from the main stream. The farm mentioned in the previous report as belonging to Mr. Stout and located about a mile above the intake is now occupied. A tributary stream passes between the house and barn and drains the barnyard. The sink drain discharges into this stream and a manure pile was located at the barn not over 25 feet from the stream. The privy, which was in a bad condition, is located on the bank of a dry channel leading to the main stream. The spring brook watershed above the point of intake is about half a square mile in area and is entirely uninhabited.

In a report on an inspection of the supply dated June 21, 1921 the following recommendations were made:

1. That the owner of the supply rearrange the cross-connections so as to deliver only the supply from the spring brook to the village for human consumption.
2. That the insanitary conditions on the watershed of the old brook be corrected so as to improve the sanitary quality and that it be delivered for human consumption in case of necessity only.
3. That in view of the fact that it is practically impossible to render a surface supply absolutely safe without purification the owner should consider the development of a new auxiliary supply should there be any need for it.

COOPERSTOWN

A reinspection of the public water supply of the village of Cooperstown, Otsego county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department on June 3, 1921. A previous inspection of the supply was made by this Division in 1916 and the report thereon published in the Annual Report of the Department for that year.

Cooperstown is located at Otsego lake in the central part of New York state. The present population is estimated at 2,720, practically all of which are served with water from the public water supply. The waterworks are owned and operated by the Cooperstown Aqueduct Association under the direction of Mr. Waldo Johnstone, president and superintendent. The water supply is derived from Otsego lake and is sterilized with liquid chlorine before being pumped into the distribution system.

Otsego lake is about 1 mile wide and 8 miles long and is subject to pollution, due to the numerous summer cottages and hamlets and villages on the watershed. The shores are used as pleasure resorts during the summer and ice is cut from the lake in the winter.

The previous recommendations of this Department in regard to providing scales for checking the amount of chlorine applied to the water and in regard to keeping complete daily records of the operation of the chlorination apparatus have been carried out.

In a report dated July 6, 1921 it was recommended that the authorities maintain a careful supervision over the operation of the water plant and that liquid chlorine be applied at all times at such rates as will render the supply free from contamination.

CORTLAND

A reinspection of the public water supply of the city of Cortland, Cortland county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on December 10, 1920. Previous inspections of the supply were made by this Division in the years 1911 and 1915 and reports published in the Annual Reports of the Department for those years.

Cortland is located on the Tioughnioga river 37 miles south of Syracuse. The present population is 13,292, of whom 98 per cent is served with the public supply. The waterworks are owned by the municipality and are under the control of a water board, of which Mr. M. A. Chase is president. The water is derived from a dug well located within the city limits, near its western boundary, and some 500 feet southeast of Otter creek, a tributary of the west branch of Tioughnioga river. It is delivered by pumping through the distributing system. The total daily water consumption is 1¼ million gallons. The city has a sewerage system, the sewage being discharged without treatment into Tioughnioga river at a point 2 miles below the city.

The well, which is 22 feet in diameter and 18 feet deep, is walled with concrete for its entire depth. At the time of the inspection the surface of the water was 4 feet from the ground surface. The sanitary conditions surrounding the well appeared to be good.

In a report on an inspection of the supply dated January 20, 1921 the following conclusions were made:

1. That the water supply was of a satisfactory sanitary quality at the time of the inspection.
2. That the authorities in charge of the water supply have carried out the previous recommendations of this Department.

It was therefore recommended that the authorities continue maintaining their careful supervision of the public water supply.

CROTON-ON-HUDSON

A reinspection of the public water supply of the village of Croton-on-Hudson, Westchester county, N. Y., was made by Mr. W. W. Young of this Division on October 6, 1921. Previous inspections of this supply have been made in 1915 and 1916 and reports thereon published in the Annual Reports of the Department for those years.

Croton-on-Hudson is located at the confluence of the Croton and Hudson rivers about 35 miles north of New York and has a present population estimated at about 2,300. About 80 per cent of the population are served by the public water supply. The supply is also furnished to a population of about 500 persons in the adjoining hamlet of Harmon. The waterworks are owned and operated by the municipality under the direction of Mr. Frank Altz, superintendent.

The water supply is derived from a dug well in the valley of the Croton river. Duplicate pumps are provided in a nearby pumping station for pumping the water from this well directly to the distribution system and reservoir. The average daily consumption amounts to about 150,000 gallons. A public sewer system was being installed at the time of the inspection. The details of the waterworks system remain as described in the previous reports with two exceptions, the removal of the cattle, houses and privies on the watershed adjoining the river above the well; second, the installation in July, 1921, of auxiliary pumping apparatus.

In a report on an inspection of the supply, dated October 17, 1921, the following conclusions were made:

1. That the village authorities in charge of the public water supply have carried out in part the previous recommendations of this Department and the sources of pollution of the Croton river referred to in previous reports appear to have been practically eliminated.

2. That during freshets the overflow from the present dam as now regulated by the city of New York does not seem to flood the land immediately surrounding or above the well.

3. That at the time of the inspection the public water supply of Croton-on-Hudson was of a fairly satisfactory sanitary quality.

It was recommended:

1. That the property of the village on the island near the well be fenced or the entire island purchased or other measures taken so that all cattle and other animals may be excluded from the area surrounding the well.

2. That the authorities in charge of the public water supply make frequent inspections and endeavor to prevent the pollution of the water of the Croton river between Croton dam and the well.

DELANSON

An investigation of the public water supply of the village of Delanson, Schenectady county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on May 10, 1921. Previous inspections of this supply were made in 1916 and 1920, reports on which may be found in the respective Annual Reports of the State Department of Health.

Delanson is an incorporated village of some 400 inhabitants and is located in the southwestern part of Schenectady county, some 15 miles south of Schenectady on the Delaware and Hudson Railroad. There is no public sewer system in the village, the houses being served mainly by cesspools and privies. The public water supply is owned and operated by the Duanesburg Water Company, of which Mr. Russell Warren is president. The supply is derived from two small streams tributary to the Normanskill creek, on which two reservoirs have been developed by the construction of dams. The first reservoir is located some 1¼ miles north of the village and the second is located some 4 miles north of the village. The flow from the upper reservoir is led through a pipe line to a stream where it runs through an open channel to a small intake located about 1 mile below. From this point the supply is conveyed through a pipe line to the village distributing system and the overflow is discharged into the lower reservoir. The flow from the lower reservoir also is conveyed to the pipe line leading to the village from the upper intake.

There are about 2⅛ square miles of watershed tributary to the upper reservoir, on which there are also some 10 houses. The watershed area tributary to the distributing reservoir is approximately ¼ of a square mile, on which only one house is located. At the upper reservoir a barn and chicken yard are located on the bank of the reservoir, while the house and privy are located below a drainage ditch so that the drainage is not toward the reservoir. At the time of the inspection it was found that the conditions on the watershed and the reservoir were approximately the same as those having been described in the previous report.

In a report on an inspection of the supply dated June 13, 1921, the following conclusions were made:

1. That, as previously pointed out, the public water supply of the village of Delanson is subject to contamination from the animals and persons living upon the watershed as well as from the accidental, incidental or wilful contamination by hunters, fishermen and trespassers on the watershed.

2. That the physical quality of the supply is somewhat affected at times by rainfall and heavy runoff by the resulting high color and turbidity.

3. That the officials in charge of the water company have not carried out the previous recommendations of this Department by installing a chlorinating plant, relocating the road around the lower reservoir or eliminating the contamination of the supply at the upper reservoir by removing the barn buildings located along the lower shore.

It was, therefore, recommended:

That the water company take immediate steps to carry out the previous recommendations of this Department, namely:

(a) The elimination of sources of contamination at the upper reservoir by removing the barn buildings and chicken house from the lower shore.

(b) The relocation of the road around the lower reservoir.

(c) The installation and effective operation of a chlorination plant for sterilizing the public water supply.

(d) The consideration of the matter of the installation of a modern filter plant in order to guarantee a water that shall be of good physical as well as of a safe sanitary quality at all times.

DELHI

A reinspection of the public water supply of the village of Delhi, was made by Mr. W. J. Erickson, sanitary inspector in this Department, on May 10, 1921. Previous inspections were made in 1908 and 1915 and reported upon in the Annual Reports of the Department for the respective years. Delhi is a village of about 1,800 inhabitants located in the central part of Delaware county on the west branch of the Delaware river. The water supply is owned by the village and operated under the direction of the board of water commissioners for which Mr. H. R. Graham is superintendent. The water supply is derived from Steele brook which is impounded in a reservoir located about a mile northwest of the village. From this reservoir the water is distributed through the distributing system. The consumption averages about 115,000 gallons a day. Rules and regulations were enacted by this Department in 1911.

Steele brook has a watershed area above the reservoir of about 5.7 square miles, on which are about 120 inhabitants. From the recent inspection it appears that the sources of contamination on the watershed have been corrected, but that no steps have been taken toward the installation of a chlorine plant as previously recommended.

In a report on an inspection of the supply dated July 21, 1921, the following recommendations were made:

1. That the board of water commissioners continue to rigidly enforce the rules and regulations, making regular inspections in order to detect any violation of these rules and regulations.
2. That in order to protect the supply at all times from serious intermittent contamination of animal and possible human origin, the authorities consider the advisability of installing a modern purification plant in order to yield a safe water at all times.
3. That pending the installation of complete purification the supply be effectively sterilized with liquid chlorine.

DOLGEVILLE

An investigation of the public water supply of Dolgeville, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on April 22, 1921. Previous investigations have been made by this Department in 1916 and 1918, the reports on which may be found in the Annual Reports of the State Department of Health for the respective years.

Dolgeville is an incorporated village of some 3,500 inhabitants and is located partly in Herkimer and partly in Fulton counties, on East Canada creek, some 8 miles northeast of Little Falls. The village is served with a public sewer system and the sewage is discharged into East Canada creek, after treatment in a sewage disposal plant consisting of settling tanks. The water supply is owned by the village and is operated under the board of trustees, of which Mr. Charles M. Cramer is president. The supply is derived from an impounding reservoir on Cold creek, north of the village. Nearly all of the population is served by the public water supply.

The watershed of Cold creek has an area of about 1½ square miles above the incoming reservoir. A mine was formerly located upon the watershed but has not been operated for some years. The water supply is subject to accidental or wilful contamination from passersby on the highways crossing the watershed, from cattle pasturing thereon and from hunters and fishermen who may visit the watershed. At the time of the inspection, for a distance of approximately 1 mile above the reservoir, evidences of recent teaming along the road paralleling the small stream were observed. Furthermore, evidences of fishermen were found along the banks of the streams and excreta observed along the stream bed.

In a report on an inspection of the supply dated May 11, 1921, the following recommendations were made:

1. That the village authorities continue their careful supervision of the supply, making frequent inspections in order to discover and remove any sources of contamination existing on the watershed.
2. That the rules and regulations enacted by this Department for the sanitary protection of the public water supply be rigorously enforced by the authorities in charge of the supply and that all fishermen and hunters be prohibited from trespassing on the watershed above the intake.
3. That if this is impracticable, the village authorities in charge of the public water supply install and put in operation a chlorination plant for the sterilization of the public water supply.
4. That in case the mine should be operated at any time in the future, the previous recommendations concerning the installation of a purification plant be carried out immediately.

DOWNSVILLE

A reinspection of the public water supply of the village of Downsville was made by Mr. W. J. Erickson on May 11, 1921. A previous inspection of this supply was made in 1915 and is reported upon in the Annual Report of this Department for that year.

Downsville, which is an incorporated village of about 600 inhabitants, is located in the south central part of Delaware county on the east branch of the Delaware river. About half of the population is served by the main supply, which is owned by the Downsville Water Company, for which Mr. C. E. Hulbert is president. Two other small supplies, known as the Smith spring supply and the Holmes spring supply, each serve about 10 or 12 houses. The main supply is derived from a small stream known as Tub Mill brook. The water is conveyed from the intake to a small circular reservoir located about a mile from the village. From this reservoir the water is distributed by gravity. At times of drought it is possible to augment the supply from Willson Hollow brook.

The watershed of Tub Mill brook is about half a square mile in area with a total population of 6. The first farm is about half a mile above the intake and is known as the Tompkins farm. The privy is about 175 feet from the stream but only about 20 feet from a drainage course. It is provided with a movable container but in a bad condition. The house drain had clogged prior to the time of the visit and had been torn up. However, the drain emptied into the same drainage course that passes the privy at a point about 24 feet below and thus empties into the creek. The cellar of the house had been banked with manure. Several springs issue from the ground above, one of which passes through the barnyard, another through the pigpen to the stream. About a quarter of a mile above this place is the farm recently purchased by J. L. Stewart. The house is not occupied at present though cattle were being kept in the barn. Cattle were being pastured along the stream below the farm. A watering trough is located in the brook below the barn. The barn which was full of manure and in a very insanitary condition stands 25 feet from the stream. A manure pile was 50 feet from the stream. The privy which does not appear to have been used for some time is about 75 feet from the stream.

The watershed on the Willson Hollow brook is about 5 square miles in area. There are numerous houses located near the stream.

The Smith supply is derived from three or more springs. From these springs the water is conducted to a small reservoir from which it is distributed to the consumers by gravity. They are located in pasture lands. A small spring-fed stream flowing through a field in which cattle were pastured seeps into the ground a few feet above one of the springs and it is probable that the spring is largely fed from this source. There are several houses above this spring and a privy is about 75 feet above on a natural drainage toward the spring, as is also a pigpen and a hen house.

The Holmes spring is located in an open field.

In a report on an inspection of the supply dated June 11, 1921, the following recommendations were made:

1. That immediate steps be taken to correct the insanitary conditions existing on the watershed which may in any way contaminate the water supply furnished by the Downsville Water Company.

2. That should any difficulty be encountered in correcting these conditions the company apply to this Department for the enactment of rules and regulations for the sanitary protection of the water supply.

3. That as it is impractical to remove all possibility of contamination of the supply, the company adopt some modern methods of purification such as effective filtration or sterilization.

4. That, in view of the fact that the present supply is insufficient at times, the company consider the advisability of developing a new supply of safe sanitary quality and of adequate quantity.

5. That the Smith and Holmes supplies be protected from surface wash and fenced to prohibit trespassing.

6. That the spring supplying the Smith supply, which is nearest the privy and below the small stream, be disconnected from the system and abandoned.

DRYDEN

A reinspection of the public water supply of the village of Dryden, Tompkins county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on May 31, 1921. A previous inspection of the supply was made by this Division in the year 1916 and a report thereon published in the Annual Report of the Department for that year.

Dryden is located 34 miles southeast of the city of Auburn, and 12 miles northeast of Ithaca. The present population is estimated at 750. Of the total population 90 per cent is served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners, of which Mr. A. C. Scott is president. The water supply is derived from three springs located about 2½ miles northeast of the village. From these springs the water flows by gravity into the distributing system. No record is kept of the daily consumption, but based on a capita consumption of 80 gallons per day, it would amount to about 54,000 gallons. The springs from which the supply is derived are developed by the construction of masonry basins which are covered with locked wooden covers. The Scofield spring is about 6 feet square and 3 feet deep. The spring is situated in an open field. Cattle pasture in the vicinity of the spring. The collecting spring is located about 50 feet below a highway and acts as a collecting basin for the other springs. It is about 8 feet square and from 4 to 5 feet deep and is provided with a locked wooden cover. Three overflow 3-inch cast-iron pipes extend 3 or 4 feet from the downstream side of the spring and a considerable amount of water is wasted as the 4-inch discharge pipe from this collecting chamber does not take all of the water. The area on which this spring is located is fenced, but trespassing is possible. The nearest house is about 100 feet distant, and at little higher elevation than the spring basin. From the inspection it appears that no steps have been taken to carry out previous recommendations.

In a report on an inspection of the supply dated June 23, 1921, the following recommendations were made:

1. That the present supply be properly developed free from all sources of pollution and sterilized by the application of liquid chlorine at a rate of not less than .25 p. p. m.

2. That the authorities in charge of the water supply immediately carry out the recommendations of this Department that have not as yet been acted upon.

DUNKIRK

An inspection of the public water supply of Dunkirk was made by Mr. Earl Devendorf on June 7, 1921. The city of Dunkirk is located in the northern part of Chautauqua county on the shore of Lake Erie, some 40 miles southwest of Buffalo. The population is about 18,000, practically all of which is served with the public water supply. The waterworks are in charge of the board of water commissioners, of which Mr. W. O. Peck is superintendent. The water supply is derived from Lake Erie. Besides the pumping equipment, the city operates an electric light station. The average daily consumption in 1920 was approximately 4 million gallons per day, of which it is estimated 1½ million gallons per day is used for industrial purposes. The supply is sterilized by applying liquid chlorine to the suction well through a Wallace & Tiernan Manual Control Solution feed type of chlorinator. Chlorine was being applied to the water at the rate of approximately 0.25 parts per million. It is said that the chlorine is applied continuously, except about 5 minutes every two weeks to change the connections and apply a new cylinder.

It was found upon inspection that the conditions surrounding the supply were practically the same as described in the previous report. The city authorities were, however, engaged in remantling the pumping station and were considering acquiring a new source of supply on the main or east branch of Canadaway creek within the town of Arkwright. The design for the proposed new supply involved the use of water for generation of electric energy from the storage resrvoir, after which the water is discharged into a secondary reservoir from which water will be supplied by gravity to the city. The proposed purification plant consists of a rapid sand filtration plant and possibly sterilization with liquid chlorine.

In a memorandum on an inspection of the supply dated December 31, 1921, the following recommendations were made:

1. That the city authorities consider the treatment of the city sewage and the filtration of the lake supply or the acquiring of a new source of supply that shall be both sufficient in quantity and of a safe sanitary quality at all times.

2. That pending the purification of the present supply or the acquisition of a new source of supply, the city authorities continue their careful supervision of the operation of the chlorination apparatus in order that chlorine may be applied in sufficient quantity to properly sterilize the supply.

3. That the city authorities provide the necessary connections for attaching two cylinders to the chlorination apparatus in order that there may be no interruption in the application of chlorine to the public water supply at times of changing cylinders.

EARLVILLE

A reinspection of the public water supply of the village of Earlville, Madison county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer of this Department on February 23, 1921. Previous inspections of this supply were made by this Division in the years 1908 and 1918 and reports thereon published in the Annual Reports of the Department for those years.

Earlville is located about 35 miles southwest of Utica and has a population of about 900, about 90 per cent of which are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of trustees of which Mr. C. E. Taylor is president and Mr. John Moore, water commissioner. The water supply is derived from an impounding reservoir which is fed by two surface streams and numerous springs. Water is at times pumped directly into the reservoir from a driven well nearby.

The reservoir is located about 3 miles northwest of the village. The watershed above the intake of the reservoir is uninhabited. Signs are posted on each side of the reservoir prohibiting trespassing. Algae growths have occurred in the reservoir at times during the summer. Aside from the possibility of accidental or wilful pollution from trespassers and from natural surface wash there are no other sources of pollution.

In a report on the inspection of the supply dated March 4, 1921, the following recommendations were made:

1. That the village authorities continue to exercise a careful supervision over the sources of the water supply.
2. That a fence be constructed on each side of the reservoir in such a manner as to prevent trespassing near the water.
3. That at such times when the water supply is subject to objectionable tastes and odors, the reservoir be treated with proper amounts of copper sulphate under proper supervision.
4. That, if the village authorities have difficulty in preventing pollution of the watershed and reservoir, they apply to this Department for rules and regulations for the protection from contamination of the supply.

EARLVILLE (Emergency Hypochlorite Installation)

The installation of an emergency hypochlorite sterilization apparatus for the sterilization of an auxiliary water supply for the village of Earlville was made by Mr. A. I. Howd of this Department on September 16, and 17, 1921.

The water supply of Earlville is ordinarily derived from an impounding reservoir on a stream a few miles east of the village. Owing to the very dry summer of the present year, the water in the reservoir greatly diminished in quantity until on September 4, 1921, the supply was entirely exhausted and no provision had been made for obtaining water from another source. The village authorities in charge of the water supply immediately obtained a new pump from the Gould Company at Seneca Falls and had it installed and put in operation on September 8 for the purpose of pumping water into the distribution system from the Chenango river at a point in the western part of the village. The new pump was located in a mill on the bank of the Chenango river near the New York, Ontario and Western Railroad station. The pump is a Gould 7 by 8 triplex, operated at about 65 R. P. M. The pump is belt connected to a Westinghouse constant speed induction motor of 25 horsepower, operating at 1,700 R. P. M. The pump is supposed to have a capacity of 200 gallons per minute. The suction of the pump was placed in a small pocket through which water circulates from the stream.

A platform was constructed over the suction pipe near the pump and a barrel was placed on the platform for the storage of the solution of hypochlorite of lime. A connection was made from a point in the barrel a short distance above the bottom thereof and the suction line of the pump under the barrel. A stop cock was placed in the connection near the barrel for the control of the flow of the hypochlorite solution and a stop was placed in the connection near the suction main.

Since the pump was being operated for only 6 hours a day a solution of hypochlorite of lime was made to be used uniformly during the 6 hours of pumping. About 1⅛ pounds of hypochlorite were used to the barrel of water and the solution applied to approximately 90,000 gallons of water over a period of 6 hours. Assuming about 30 per cent of available chlorine in the hypochlorite, the rate of application was equivalent to about 0.5 parts of free chlorine per million parts of water. The apparatus was tested out in the afternoon of September 16 and put into operation at 7:30 in the morning of September 17. A test for excess chlorine by the starch iodide method was made and a satisfactory reaction obtained showing that the proper amount of hypochlorite was being applied. The operator in charge of the pumping equipment was present during the installation of the apparatus and was instructed in the operation of the apparatus for sterilizing the supply and the manner of making a test to indicate whether or not the proper amount of hypochlorite was being applied.

Samples of the raw and chlorinated water were collected and sent to the Division of Laboratories and Research for examination.

The results of the analysis of the sample of water collected from the stream near the suction pipe indicate a high total bacterial count and the presence or organisms of the B. Coli type in all of the 10 c.c. and 1 c.c. volumes tested, indicating that the water was seriously polluted. A sample of chlorinated water collected during the testing of the apparatus shows a reduction of about 50 per cent in the bacterial count and the elimination of organisims of the B. Coli type in 1 cc. volumes. The sample of chlorinated water collected after the apparatus had been put into operation had a very low bacterial count and organisms of the B. Coli type were absent in all volumes tested, indicating that the chlorination of the supply was very effective.

In a report on the investigation of the supply dated December 30, 1921, it was pointed out that owing to the very dry summer, the regular water supply of the village of Earlville became exhausted and it was necessary to obtain an auxiliary supply. This supply was obtained from the Chenango river which is seriously polluted and pumped into the mains several days before this Department was notified and before an apparatus was installed for sterilizing the supply. As a result, the village experienced a slight outbreak of intestinal disturbances and was fortunate in the prevention of an outbreak of typhoid fever. In view of this experience the village authorities should make provision for the installation of an apparatus for the sterilization of this auxiliary supply.

It was therefore recommended that the village authorities be urged to give immediate attention to the securing of an apparatus to be used for the sterilization of the auxiliary supply wherever it is necessary to pump from the Chenango river.

EAST AURORA

A reinspection of the public water supply of the village of East Aurora, Erie county, New York was made by Mr. Alfred Mullikin, assistant engineer in this Department, on December 14, 1920. A previous inspection of the supply was made by this Division in 1914 and a report thereon published in the Annual Report of the Department for that year.

East Aurora is located about 17 miles southeast of Buffalo. The present population is estimated at 3,700 and of the total population 90 per cent are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of the board of trustees of which Mr. Fay Ball is president and Mr. Charles Addington is superintendent.

The water supply is derived from two sources, namely, from several springs located in the southern part of the village on the Casenovia creek and from driven wells located some ¾ of a mile north of the village east of the railroad tracks. From the springs, known as the South street supply, water flows by gravity to a collecting reservoir from which it is pumped into the distributing system. From the driven wells, known as the Pine street supply, the water is pumped directly into the distributing system. A reservoir located in the eastern part of the village takes the surplus and acts as an equalizing reservoir. The average daily water consumption is in the neighborhood of 400,000 gallons or 108 gallons per capita. In general the condition of the waterworks system remains as described in a previous report.

The South street supply consists of 4 springs at the foot of a steep hill, developed by the use of wooden boxes about 1½ feet wide, from 4 to 8 feet long and from 2 to 3 feet deep, sunk about 3 feet below the surface of the ground. The sides of the boxes contain numerous drilled holes by which the water enters. These boxes which incase the springs are badly in need of repair and are not provided with tight wooden covers. Surface ditches filled with loose stone in the vicinity of the boxes are so arranged as to permit the surface ground water to flow into these boxes. On top of the bank from which these springs issue and just east of South street some 200 feet from the springs are numerous houses. There is a sewer in South street from which pollution may find its way into the water bearing strata from which the spring water is obtained. On the west side and lower portion of the bank is a fence but the other sides have not been properly fenced to prevent trespassers and accidental or wilful pollution is possible, since there is a small picnic ground within a few hundred feet of the springs.

The South street reservoir into which the spring supply flows is estimated to have a capacity of 500,000 gallons. The reservoir is not provided with a roof and is made up by earth embankment having sides of rip rap and a bottom of concrete. From the precipitous bank it is very likely that the snow or heavy rain on the east side at times causes surface water to enter the reservoir. It would therefore seem desirable that a ditch be made on the east side of the reservoir embankment to carry off all surface wash. There were no other possible sources of pollution noticed. This reservoir is cleaned yearly. It is inclosed by a wire fence which is, however, open sufficiently at the north end to permit the entrance of animals.

The Pine street supply consists of 17 driven wells located north of the village on about 15 acres of ground on the west edge of a pond. The wells are 3 inches in diameter and from 28 to 30 feet deep. These wells are very close together, driven in a space not over 30 feet square in area. There are no houses within 500 feet of the wells.

In the previous report of this Department certain recommendations were made upon which the village authorities have apparently taken no action.

In a report upon an inspection of the supply dated February 9, 1921, it was recommended that the authorities in charge of the water supply immediately carry out the previous recommendations which have not been acted upon, namely; that the authorities secure an additional supply of satisfactory quality from some other source well removed from possible contamination and the complete abandonment of the South street springs; that pending the acquirement of the new supply, the springs be carefully protected and the boxes repaired and provided with tight covers; that the village authorities secure the services of a competent water supply engineer to advise them on matters pertaining to the proper sources and methods for obtaining a sufficient and satisfactory additional water supply.

EAST RANDOLPH

An investigation of the public water supply of the village of East Randolph, Cattaraugus county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on March 31, 1921. A previous investigation of this supply was made in 1916 and a report thereon may be found in the Annual Report of the State Department of Health for that year.

East Randolph is an incorporated village of some 600 inhabitants located in the southwestern part of Cattaraugus county, about 19 miles east of the city of Jamestown. There is no public sewer system in the village, the houses being served by privies and cesspools. The water supply is owned by the village and is derived from springs, one of which is located about 1¼ miles north of the village and the others, known as the Fishery springs, located about 1½ miles southeast of the village. The water from the first spring flows by gravity to a storage reservoir located near the village and the water from the Fishery springs is pumped by waterpower into the distribution system against a pessure maintained by the village reservoir. Nearly all of the population is served with the public water supply.

The spring north of the village is satisfactorily located and there are no nearby sources of pollution.

The Fishery springs are located at the foot of a steep hill at a point which was formerly used as a fish hatchery. There are numerous springs in the vicinity and the yield is far in excess of the amount of water used by the village. The area surrounding the springs is wooded and there are no nearby permanent sources of contamination. The area of the watershed from which the springs may receive surface wash is approximately 15 acres, of which the village is said to own some 10½ acres. The springs are, for the most part, inadequately protected from surface wash and the entire area is subject to the accidental, incidental or wilful contamination from trespassers. At the time of the inspection a wooden table and seats were observed on the grounds surrounding the spring and it is said that the grounds in the summer time are used to a great extent by picnic parties. This practice should be stopped under all consideration as with the springs wholly unprotected this practice would constitute a serious menace to the purity of the supply. The spring basins should be properly developed and protected from surface wash and the entire area enclosed in a man-tight fence provided with a locked gate and the area should be posted to prevent trespassing.

In a report upon an inspection of the supply dated June 21, 1921, the following recommendations were made:

1. That the village authorities endeavor to maintain the conditions surrounding the springs in such a manner that no pollution of the springs may occur.
2. That the area surrounding the Fishery springs be enclosed in a man-tight fence provided with a locked gate and that the area should be posted against trespassing.
3. That the springs be protected from surface wash by the construction of drainage ditches.

EAST SYRACUSE

A reinspection of the public water supply of East Syracuse, Onondaga county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on December 14, 1920.

Previous inspections of this supply were made in 1915 and 1918 and the reports thereon published in the Annual Reports of the Department for these years.

East Syracuse is located about 5 miles east of the city of Syracuse. The present population is 4,110, practically all of which is served with the public supply. Part of the unincorporated village of Jamesville, which is located 5 miles south of the village, is also served by this supply. The waterworks are owned by the village and are under the control of the board of water commissioners, of which Mr. Elmer Hart is president and Mr. Palmer Gregg is superintendent.

The water supply is derived from Wright brook at a point about 6 miles south of the village, and from the Leiter springs located south of Wright brook. As an auxiliary supply, water is derived from the Pompey springs which are 9 miles south of the village. The supply is sterilized with liquid chlorine and delivered to the village by gravity.

Wright brook above the intake of the water supply has a drainage area of 1.25 square miles and on the watershed which is pasture and forest land, are located 4 houses whose privies are in such condition that their contents may be easily washed into the stream. At the time of the inspection liquid chlorine was being applied at the rate of 0.12 parts per million, a rate too low to satisfactorily sterilize the supply.

In the report dated February 4, 1921, the following conclusions were drawn:

1. That the village authorities are contemplating the construction of a 10,000,000-gallon reservoir to provide additional storage.
2. That the water supply was not of an entirely satisfactory sanitary quality at the time of the inspection.
3. That the rate of application of chlorine is too low to satisfactorily sterilize the water supply.
4. That the authorities in charge of the water supply have partially carried out the recommendations of this Department.

It was therefore recommended:

1. That the authorities in charge of the public water supply apply chlorine to the water continuously in sufficient quantities to effectively sterilize it and that frequent tests be made of the chlorinated water for excess chlorine and the rate of application of chlorine regulated in accordance with the results of the tests.
2. That the authorities remove all surface pollution on the Wright brook watershed.
3. That should difficulty be experienced in removing the sources of pollution, the authorities in charge of the public water supply apply to this Department for the enactment of rules and regulations for the protection of their supply.
4. That the authorities take the necessary steps in increasing the present water supply either by increasing their storage capacity or by developing a new source of supply.

ELLENVILLE

An investigation of the public water supply of the village of Ellenville, Ulster county, N. Y., was made by a representative of this Division on November 4, 1921. This investigation was made at the request of the village authorities with particular reference to the quality of a proposed additional source of public water supply to be obtained from Lake Maratanza. Previous inspections were made in 1908, 1915, 1916 and 1918 and the reports thereon published in the Annual Reports of the Department for these years.

Ellenville is located 26 miles southwest of Kingston. The village has a present population of about 3,100, practically all of whom are served by the public water supply. The waterworks are in charge of a board of water commissioners, of whom Mr. J. M. Hoornbeck is president.

The public water supply is derived by gravity from two streams known as North and South Gully brooks, having adjoining watersheds of about 2 square miles area each. There is also provision for an emergency chlorinated supply from a large dug well near Sandburg creek in the village. Chlorination is also provided for the supply from South Gully, which supplies a population of about 600 in the easterly portion of the village and is subject to pollution from a summer resort located in the upper part of this gully. The total consumption is estimated at 200,000 gallons per day or 64 gallons per capita per day. In general the details of the waterworks system remain as described in the previous report with the exception that there appears to be a smaller number of inhabitants and occupied residences on the watershed tributary to the South Gully than were noted at the time of the previous inspection.

The recent inspection disclosed the fact that, even with the chlorinated water from the South Gully and the well supply in use, it became necessary to prohibit the use of water in summer for such purposes as washing automobiles and sprinkling. It further appeared that an engineer had been employed by the village and an option obtained on a tract of land of some 700 acres in area, about 5 or 10 per cent of which was occupied by Lake Maratanza and from which it was proposed to obtain an additional supply.

The plateau upon which Lake Maratanza and most of this land are located comprises an area about 2 miles long by ½ mile wide, extending in a northerly and southerly direction along the top of the Shawangunk mountains about 2½ miles southeast of Ellenville. It lies at an elevation of about 1,900 feet above the village and adjoins the watersheds of the North and South gully. There is no permanent population on the plateau. Its soil appears composed very largely of white sand and gravel and is almost entirely forested with evergreen trees. It is surrounded by precipitous slopes and is isolated. The village intends to purchase over 1 square mile of the land, which includes all the shores of the lake and practically all of the adjacent watershed tributary to it makes it appear that, if properly protected from opportunity for contamination, Lake Maratanza should afford a supply of satisfactory sanitary quality.

Since the total volume of annual runoff or stream flow of either the North or South Gully brooks would, if stored, yield an amount of water greatly in excess of the daily consumption now used by the village, it has previously been pointed out that one remedy for the shortage of water supply would be the provision of additional storage facilities.

The availability of Fantine Kill as a possible additional source of supply under certain conditions, was also noted at the time of the investigation. This stream, which enters Sandburg creek near the northerly village line, has a comparatively gently sloping watershed about 3 square miles in area above a point suitable for a gravity intake. The top soil, of sandy gravel and shale, appears largely covered with second-growth timber. Except for about 10 occupied houses, half of which are remotely located from the stream, and a road located at some distance from the stream; this watershed appears to be free from any permanent sources of pollution.

In a report upon an inspection of the supply dated November 21, 1921, the following recommendations were made:

1. That the Board of Water Commissioners continue to make frequent and careful inspections of the watersheds of the North and South Gully brooks as well as the sanitary conditions surrounding the well used as an auxiliary source of supply in order to discover and eliminate any sources of pollution that may be found to exist.
2. That the Board of Water Commissioners continue to treat with liquid chlorine at all times the supply from the South Gully and the well, keep records of the rate of application of chlorine and make daily tests for excess chlorine by means of the starch iodide test, a copy of which is attached hereto.
3. That in view of the complicated hydraulic and sanitary problems involved, the Board of Water Commissioners should retain the services of a competent engineer to make a detailed study of the problem and advise them concerning the most economical and feasible plan to adopt in securing additional storage or the acquisition of an auxiliary source of supply.
4. That before any new source of supply is developed the village authorities should receive the approval of the State Water Power Commission in accordance with the provisions of section 499 of the Laws of 1921.

FAYETTEVILLE

A reinspection of the public water supply of the village of Fayetteville, Onondaga county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on December 11, 1920.

A previous inspection of the supply was made by this Division in 1916 and the report thereon published in the Annual Report of the Department for that year.

Fayetteville is located on the West Shore railroad, about 10 miles southeast of Syracuse. The present population is 1,789, of which practically all are served by the public water supply. The waterworks are owned and operated by the village under a water board, of which Mr. Charles M. Kessler is president. The water is derived from springs located two miles east of the village. As an auxiliary supply, springs have been developed in the southeastern part of the village.

The water from the springs of the main supply is collected in catch basins of masonry construction covered and well protected from surface wash. The village owns some 30 acres of land about the springs, this land having been reforested with pine, ash and spruce. There are three houses within 400 feet of the auxiliary supply. Surface wash from the highway may reach the supply unless suitable precautions for its exclusion are taken.

In the report dated February 18, 1921, the following recommendations were made:

1. That the authorities in charge of the public water supply maintain a careful supervision of the supply and the watershed tributary to it.
2. That the auxiliary spring supply be properly protected from the surface wash from the highways in the vicinity.
3. That all houses within 500 feet of the spring be provided with privies having removable containers and that these containers be kept in satisfactory sanitary condition at all times and that the contents of them be removed at regular intervals and buried at some place remote from the water supply.

FRIENDSHIP

A reinspection of the public water supply of the village of Friendship was made by Mr. W. J. Erickson, sanitary inspector in this Department, on December 15, 1920. A previous inspection of this supply was made in 1917 and it was published in the 38th Annual Report of this Department.

Friendship is an incorporated village of about 1,200 inhabitants, located in the west-central part of Allegany county, about 40 miles west of Hornell. Practically all of the population and about 100 outside of the corporate limits are served by the public water supply, which is owned by the village and operated by a board of water commissioners, for which Mr. T. E. Tefft is chairman. The village is not provided with a sewer system, the houses being served by privies and cesspools.

The supply is derived from 8 springs located about 2 miles southeast of the village, and from a deep well located about 2½ miles southwest of the village. A drilled well and a dug well located in the southern part of the village and a new drilled well near the storage reservoir was retained for emergency purposes.

The six upper springs are located in pastures or cultivated land and are not fenced in, and it is therefore possible that some contamination reaches them from this land by infiltration through the soil. The other two springs are located in a wooded ravine and are subject only to incidental contamination from visitors or animals on the watershed. There are no sources of pollution in the vicinity of the deep well.

The new well for emergency use is located near the reservoir and is driven to a depth of about 260 feet through rock to water bearing sand and is said to be cased to the bottom by an 8-inch casing. The well is located at the edge of the wood near the top of a hill and is not subject to pollution other than that of visitors and animals on the watershed. The dug wells in the southern part of the village are located in a comparatively built-up section. There are about six houses within 500 feet of the wells and within 1,000 feet there are six additional houses. All of these houses are provided with cesspools, at least three of which are within 500 feet of the wells. It seems possible that at times, especially when there is a heavy drain on the wells, that contamination reaches them from the cesspools. It was learned at the time of the inspection that the regular supply has become more and more inadequate for the needs of the village, due to the decreased yield of the spring, and at such time it is necessary to pump from the wells.

In the report dated January 19, 1921, the following recommendations were made:

1. That the springs be protected from contamination from pasture lands by fencing so as to exclude cattle from the immediate vicinity.
2. That the village retain an engineer to study into the problem of the development of a new additional supply and to advise as to the most economical method for the development of such a supply that shall yield an adequate quantity of water of satisfactory quality.
3. That pending the development of the new supply, the wells in the southern part of the village be used only in case of necessity and then only after warning to boil the water has been issued.
4. That upon the development of a new additional supply these wells be abandoned.

FLEISCHMANNS

A reinspection of the public water supply of the village of Fleischmanns was made by Mr. Earl Devendorf, a representative of this Division, on July 6 and 7 and August 24, 1921. A previous investigation of this supply was made in 1915 and a report thereon printed in the Annual Report of the Department for that year.

Fleischmanns is an incorporated village having a resident population of some 700 inhabitants and a summer population estimated at from six to ten thousand. Of the total population some 90 per cent are served with the public water supply. The village is not provided with a sewer system, the houses being served by privies and cesspools. The waterworks are now owned by the village, having been purchased from the Griffin Corners Water Company, and are operated by a board of water commissioners of which Mr. Crosby Kelly is president.

The water supply is derived from springs located about 1 mile southeast of the village from which the water flows into a collecting basin some 3 feet square and thence into the main leading to the village, the excess over consumption discharging into the nearby storage reservoir. The storage reservoir is constructed of concrete and covered with a roof, the lower part of which is constructed of wood and the upper part of 1-inch mesh wire netting. The reservoir is 40 by 60 feet in plan and 10 feet 8 inches in depth, having a capacity of some 190,000 gallons. The conditions surrounding these springs are in general as described in the previous report.

The recent inspection was made due to the fact that the regular supply had become exhausted and that it was necessary to pump water from a spring flow subject to pollution. The Department chlorination apparatus was installed and put in operation on July 7, 1921, when the village authorities first started to pump water from the auxiliary supply. At the time of the inspection it was stated that the spring flow had been gauged and found to be approximately 106,000 gallons per 24 hours. Due, however, to the increase in the summer population and the lessened flow of the springs on account of dry weather period, it was necessary for the village to install a small gasoline operated pump, having a capacity of some 10,000 gallons per 24 hours earlier in the season. It was stated that the water consumption was such that the spring supply, together with the 10,000 gallons per day being pumped by the small pump was running behind some 40,000 gallons per 24 hours, as estimated by the drop in the level of the reservoir. With the estimated spring flow given above the water consumption was on this basis at 130,000 gallons per day when the population was estimated at approximately 3,000, giving a per capita rate of consumption of over 43 gallons per day. The pump being used to pump water from the spring flow consisted of a Gould triplex pump, 6 by 5, which was operated at approximately 64 revolutions per minute by a belt driven gasoline engine, and was therefore delivering approximately 100 gallons per minute. The pump had been erected in a field below the spring flow which was subject to pollution from a house situated above the spring. At this house there was a privy and barn and at the time of the inspection the privy had been removed, the vault cleaned and the contents taken away from the watershed, and it was stated that the village authorities had arranged to install a chemical toilet in such a manner as to preclude the possibility of any pollution of the spring flow. The spring flow is, however, still subject to some opportunity for contamination from surface wash from the highway and the field above and from the barn.

The Department chlorination apparatus was installed on July 7 and the operation explained to a representative of the village. The chlorine was applied at the rate of approximately ¾ of a pound per day or .6 parts per million as estimated on the rated capacity of the pump. The application of chlorine was regulated in accordance with the results of the starch iodide tests which were made every hour by the operator. Later the village authorities ordered a manual control chlorination apparatus from the Wallace & Tiernan Company, and on August 24 when the representative of this Department visited Fleischmanns to procure the Department chlorination apparatus, it was found that the new apparatus had been installed, although the pump was not in operation at that time. It was stated that at the end of the season when it was assured that it would not be necessary to use this supply again the apparatus would be taken down and packed away for future use.

As previously pointed out the main supply is collected from springs through drain tile laid below the surface, which extends in most cases to the source of the springs. One is known as the Dump spring, located just at the edge of the railroad embankment, which crosses a small wooded ravine extending to the side of the mountain, and the other is known as the Rock spring and is located about 150 feet from the railroad and west of the Dump spring. While there are, however, no inhabitants on the watershed tributary to this spring, the spring may receive pollution from the infiltration of ground water from the railroad track above. An auxiliary supply was being obtained at the time of the inspection from the overflow of the spring by pumping into the reservoir. There appeared to be no permanent sources of pollution in the vicinity of the spring.

In a report upon an inspection of the supply dated December 30, 1921, the following recommendations were made:

1. That the village authorities continue to exercise a careful sanitary patrol of the surroundings of the regular spring supply in order that there may be no possible pollution of the spring flow.
2. That if at any time in the future it becomes necessary to again use the water from the auxiliary spring supply, the village authorities should first sterilize the supply by means of liquid chlorine before pumping it into the reservoir and regulate the application of chlorine in accordance with the results of the starch iodide test for excess chlorine, a copy of which is appended.
3. That the village authorities should engage the services of a competent sanitary engineer to aid them in securing and developing in the most economical manner such additional supply of water as may be necessary to furnish the village at all seasons of the year with a supply that shall be both adequate in quantity and of a satisfactory sanitary quality.

FULTONVILLE

A reinspection of the public water supply of the incorporated village of Fultonville was made by Mr. A. I. Howd of this Division on August 25, 1921. Previous inspections of this supply have been made by this Division in 1915 and 1918 and the reports thereon published in the annual reports of the Department for the years 1915 and 1918, respectively.

Fultonville, a village with a population of 869, is located in the north-central part of Montgomery county. Of the total population about 70 per cent are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of the board of trustees, of which Mr. R. A. Brace is president.

The water supply of the village is derived from a drilled well located in the northwestern part of the village near the Mohawk river. From the well the water is pumped directly into the mains, the surplus over consumption going to a reservoir located on a hill about one mile south of the village. Another supply known as the Starin supply is derived from springs southeast of the village and serves a small section of the village (about 10 or 15 houses). The water from the springs is collected in a small, covered reservoir from which it flows by gravity directly into the mains. It was learned that the village has made an appropriation for a number of meters, it being intended to eventually meter all the taps. No accurate estimate could be obtained as to the daily water consumption. In general the details of the waterworks system remain as described in the previous reports, but the ownership of the system has since the previous inspection, been transferred from the Fultonville Water Company to the village, the transfer taking place March 1, 1921.

The present investigation was made as a result of a request from the local board of health of the village of Fultonville. It was stated that the regular supply from the drilled well was insufficient to meet the needs of the village, and that the village was planning to pump water from an abandoned well near the pumping station. The abandoned well is a dug well about 20 feet in diameter and 40 to 45 feet deep. From the bottom of the dug well a drilled well is said to extend to an additional depth of 50 feet. The water in the well stood at a depth of about 15 or 20 feet below the surface of the ground. The well is loosely stoned up and is provided with a conical-shaped shingled roof, from which a large number of shingles are missing. The water of the well appeared oily on the surface, which was said to be due to the fact that the water of the well had risen and fallen, causing the water to flow through an old suction pipe into the pump pit where it came in contact with oil which was carried out with the receding of the water. The well is located adjacent to the pumping station, on the edge of a dirt sidewalk and roadway, about 10 feet from a house, within 50 feet of a very insanitary privy and within 200 feet of the Mohawk river. The well has not been used for some eleven years. It was stated by old residents of the village and it was learned from records at the pumping station that when water used to be pumped from the well very often it became quite turbid and, therefore, of an unsatisfactory physical quality. It is evident, therefore, that the well is subject to pollution from a number of sources and should not be considered safe for potable purposes without sterilization. If the sanitary conditions in the vicinity of the well were improved the water of the well might be suitable for domestic use, provided it is sterilized with liquid chlorine at all times, and provided the objectionable physical features of the water are overcome.

The reservoir on the hill south of the village is of masonry construction, about 35 feet wide, 75 feet long and about 8 feet deep. The reservoir is located about 25 feet from and at a slight elevation above a highway. It is not covered. A fence about 20 inches high, formed by laying 2 10-inch planks on their sides. existed at one time on top of the masonry walls of the reservoir, but the fence has gradually broken down so that only a very small part of it remains in position. A relatively large stream of water was coming from the embankment of the reservoir, due to a leak therein. Due to the fact that the village is experiencing a shortage of water the reservoir should be repaired as soon as possible.

Inasmuch as the reservoir is not covered, the waters thereof are subject to pollution from a number of sources. Dirt from the highway nearby was seen to blow into the reservoir at the time of the inspection. Dead field mice and frogs were noticed in the reservoir. The waters are also subject to accidental or wilful pollution from trespassers. It was learned that people living near the reservoir go to the reservoir at times to obtain water. A small growth of algae appeared on the bottom of the reservoir.

Complaints regarding tastes and odors in the public water supply are frequent. It was learned that generally, after the reservoir has been cleaned, the tastes and odors disappear for a time. Covering the reservoir with a tight roof would exclude animals and considerable amounts of foreign matter and prevent to a great extent the growth of algae. The elimination of the above objectionable features should improve the potability of the water.

The Starin supply remains in practically the same conditions as at the time of the previous inspection. Although there were no apparent sources of pollution the springs remain inadequately protected from surface wash.

It was learned that the village authorities have employed a consulting engineer to advise them in regard to their water supply. It appears that none of the other recommendations made in the previous reports of this Department have been carried out.

Samples of water were collected at the time of the inspection and sent to the division of laboratories and research for analysis. The results of the analysis of the sample of water collected from the dug well which it is proposed to use, show a very high bacterial count and the presence of B. coli in all 10 cc. and 1 cc. volumes tested, indicating that the water was seriously polluted.

In a report upon an inspection of the supply, dated September 14, 1921, the following recommendations were made:

1. That the village authorities take immediate steps to remove the privies located near the well from which the public water supply is derived and to satisfactorily clean and sterilize the vaults.
2. That the dug well near the pumping station should not be used as a source of public water supply and that the old connection to the well in the wall of the pumping station should be plugged to prevent water of the well from flowing into the pump pit at time of high water.
3. That the reservoir on the hill south of the village be cleaned and repaired.
4. That the reservoir be provided with a suitable cover and surrounded by a tight fence for the reasons pointed out in the body of this report.
5. That the village secure an additional source of water supply, free from pollution, for emergency use, or preferably, if an adequate and satisfactory new supply can be obtained, it be retained for emergency purposes.

GENEVA

An investigation of the public water supply of the city of Geneva was made by Mr. Earl Devendorf, assistant engineer in this Department, on December 18, 1920. Previous investigations of this supply were made by this Division in 1903, 1909, 1914, 1917 and 1919. Reports on these investigations may be found published in the Annual Reports of the State Department of Health for the respective years.

Geneva is a city of some 15,000 inhabitants, located in the eastern part of Ontario county at the northern end of Seneca lake. The city is served with a system of sewers which discharge into the lake at various points between one and two miles from the water supply intake and toward the outlet of the lake so that there is little likelihood of the water supply being affected from the sewage discharging into the lake. The public water supply is owned and operated by the city under the board of public works, of which Mr. H. K. Seybolt is superintendent.

The supply is obtained by pumping from the lake and filtering through slow sand filters and pumping the filtered water to the storage reservoir from which point it is fed by gravity throughout the city. The intake consists of a crib located some 570 feet from shore in approximately 20 feet of water. The water enters a pump well, after passing through the screen chamber. From the pump well the water is pumped by a low lift centrifugal pump to the filters. There are three units of covered filters having a total area of 0.7 of an acre. After filtration the water enters a clear water basin from which it is pumped to the storage reservoir. There are no cross-connections existing between the public water supply mains and any private fire supplies. The total amount of water pumped for the year ending December 31, 1919, amounted to 134 gallons per capita per day, of which 81½ gallons were measured through the metered services.

During 1917 the first two filter units became inadequate to treat the entire consumption of the city and at times small amounts of raw water were by-passed, which gave rise to several cases of typhoid fever. Pending the construction of the third filter unit and at the request of the local authorities the emergency chlorination plant of the engineering division of this Department was installed and operated. At the time of the inspection the public water supply was found to be in practically the same condition as described in the former report. No action has been taken towards carrying out the recommendation of acquiring a chlorination plant or sterilizing the public water supply as recommended in our last report.

Samples of water are analyzed about once a week by Hill & Ferguson, of New York City, and daily analyses are made by the city bacteriologist, Miss Mildred Davis. The results of these analyses show that while the filters are furnishing a satisfactory degree of purification, there are times when organisms of the *B. coli* type are isolated from the samples of filtered water. It is such results which cause this Department to recommend the installation of a chlorination apparatus in order that the supply may be of unquestioned purity at all times.

The results of analyses of samples of water collected at the time of the inspection indicate a removal of 25 per cent and 17 per cent of the organic matter as measured by the albuminoid ammonia and oxygen consumed contents, respectively, and an average total bacterial removal of 97.7 per cent.

In a report upon an inspection of the supply, dated February 7, 1921, the following recommendations were made:

1. That the authorities in charge of the public water supply continue their careful supervision and operation of the filter plant.
2. That, as an additional safeguard of the sanitary quality of the water and as previously recommended, the city install and carefully operate apparatus for the sterilization of the public water supply.

GILBOA

An investigation of the water supply of Gilboa, Schoharie county, N. Y., was made by Mr. William Young of this Department on June 30, 1921. A previous investigation of this water supply was made by this Department on August 5, 1915 and a report thereon may be found on page 409 of the 36th Annual Report of this Department.

At that time the population of the village was estimated at 300 and the water supply, owned by the Gilboa Water Company, obtained from 5 springs and delivered without treatment to the consumers through some 1½ miles of pipe.

Since the time of the last inspection the contractor building the Gilboa dam has purchased the property of the water company. This contractor maintains a camp of between 400 and 500 men in addition to which a considerable number of the original inhabitants still remain in the village, all of whom are using water from the supply. The water is as stated before obtained from 6 springs, 5 of which are connected to the reservoir by a single pipe and the

6th by a separate line. The discharge from the springs appeared at the time of the inspection to be about 20,000 gallons per day. Due to a long drought, water in the 100,000 gallon storage reservoir, connected with the system and normally supplied from the springs, became very low. To keep the reservoir full and ready for use in case of fire the contractor tapped a 10-inch force main which he was using to convey water from the Manorkill to a giant or hydraulic nozzle. The tap is said to be a ½-inch one and is connected by about 100 feet of 1-inch pipe to the reservoir. At the time of the inspection the reservoir was nearly full and the auxiliary supply from the Manorkill had not been used for some time but the piping was so arranged that the water could be used at any time.

An inspection was made of the watershed of the Manorkill above the dam from which the emergency supply is taken. Its area is about 25 square miles. The examination showed it to contain a population of about 400 persons, a considerable portion of whom are residents of West Conesville, Conesville and Manorkill. A close examination revealed the fact that about 15 feet from the stream entering the Manorkill from the north at West Conesville there was a privy in such condition that the contents of its vault might be readily washed into the stream. Four other privies in unsatisfactory conditions were found near the banks of the stream within less than ½ mile above the Manorkill dam. The property at Conesville was relatively free from such conditions but conditions similar to those at West Conesville were found at Manorkill and along the 6 miles or more of road between the dam and Manorkill.

The most dangerous source of contamination observed was at the house of a milliner on the road between West Conesville and Conesville at a point about a mile and a half above the dam. Here the bank is extremely steep and a privy extended out over the rock bed of the stream. Although the stream at the time of the inspection was not flowing across these rocks it undoubtedly does so at times of high water on which occasions the stream would carry away the accumulated deposits.

Beside the form of indirect pollution from human sources, it was stated that the inhabitants along the stream deposit garbage and other wastes in the stream near their residences. Many sources of pollution such as stables, pig pens and chicken yards, are located near the stream and its tributaries and in some cases liquid was flowing directly from manure piles into the creeks. In addition to this and the ordinary contamination due to the agricultural use of the bottom land through the valley there was a creamery above Manorkill discharging whey over a filled up cesspool and ponds directly into the Manorkill.

In a report upon an investigation of the supply dated July 5, 1921, the following conclusions were drawn:

1. That the quantity of water obtainable from the original source, the springs, is not sufficient to meet the present needs of the contractor's camp.
2. That arrangements have been made to take water from the Manorkill to supplement the water from the spring.
3. That the water from this source of auxiliary supply is subject to gross pollution and is not safe for human consumption without purification.
4. That the benefit of storage in the reservoir is not fully utilized since the inlet and outlet are unnecessarily close together.
5. That the hamlet of Gilboa is to be largely submerged on the completion of the dam about 4 years from now so that the development of a permanent source of water supply is not essential, although the development of a temporary supply of adequate quantity and safe quality is necessary.

It was, therefore, recommended:

1. That a new source of supply of adequate quantity and safe quality be developed or the auxiliary supply from the Manorkill be continuously

purified by filtration or chlorination before being discharged into the reservoir or used for domestic purposes.

2. That until a new source of supply has been developed, or the filtration or chlorination plant has been in satisfactory operation for at least one week, the water be boiled before its use for domestic purposes.

GLOVERSVILLE (Municipal Supply)

An investigation of the public water supply of Gloversville, as furnished by the municipal supply was made by Mr. Earl Devendorf, assistant engineer in this Department, on April 21 and May 23, 1921. A previous investigation of this supply was made in 1918 and a report thereon may be found on page 178, Volume 2, of the 19th Annual Report of the State Department of Health. The public water supply is owned by the municipality and is operated under the direction of a board of water commissioners, of which Mr. Arthur Cotton is president. The water supply is derived by impounding surface water from the hills to the north of the city, from which the supply is distributed to the city by gravity. These reservoirs, except for the Middle and Poor House reservoirs, discharge into a pipe line extending from the Dixon reservoir to the city distribution system at the northern boundary of the city. The normal daily consumption is said to vary from 2¼ to 2½ million gallons per day. There are several large mills in the city which use from 900,000 to 1,000,000 gallons per day, when they are operating on full schedule.

The most northerly of the reservoirs is the Cameron pond reservoir, which is used for storage purposes. The water from this reservoir flows through an open stream known as the Jackson-Summit creek to a point below a sparsely settled community known as Jackson Summit, at which point a diverting dam and intake have been constructed. From this intake the water is discharged into the Dixon reservoir and thence to the city. It is connected to Beach creek, Rice creek and Rice creek storage reservoirs. The Poor House and Middle reservoirs are located about 1 mile northwest of the city line. The watershed above the Cameron reservoir is an unpopulated and heavily wooded district. The stream between the Jackson Summit intake and the Cameron reservoir flows through a sparsely settled community on which there are a number of barns and privies, so located that drainage from them may indirectly reach the stream. The Dixon and Beach creek watersheds are wild, wooded and in the case of Dixon creek, uninhabited. The Beach creek watershed has three houses, remotely located from the stream. The watersheds of the Rice and Port creek reservoirs are entirely owned by the city and are fenced and posted against trespassing. The watershed of the Poor House reservoir is owned by the city and enclosed by a tight fence. The Middle reservoir is fed by springs and is fenced to prevent trespassing. Ditches have been dug to divert surface wash from the basin.

The authorities in charge of the public water supply have, in accordance with the previous recommendations of this Department, caused a chlorination plant to be installed for sterilizing the public water supply derived from the Cameron, Beach creek, Dixon, Rice creek reservoirs and Rice creek storage reservoir. The chlorination apparatus consists of a Wallace and Tiernan automatic control, Venturi operated, dry feed chlorinator. The chlorine is applied by means of an injector. Chlorine was being applied to the water at the rate of approximately 2 pounds per million gallons. At the time of the inspection all of the supply used by the city was being treated by this chlorination plant, the Poor House and Middle Spring reservoirs being out of service. The chlorination plant was installed in the summer of 1919. The city authorities have purchased one or two additional pieces of property located along the stream between Cameron reservoir and the Jackson Summit intake. The city is gradually purchasing these habitations and plan eventually to control all of the property adjoining the stream between the Jackson Summit intake and the Cameron reservoir.

There are 4 factories in the city in which auxiliary fire supplies were used in addition to the regular public supply. These mills were the Surpass Leather Company, Lincoln street; the Gloversville Knitting Company, Beaver street; the Parkhurst Woolen Company, Harrison street, and the Gloversville Leather Company, West Fulton street. At the Gloversville Knitting Company on Beaver street it was found that the fire pumps are connected with the Cayadutta creek and springs. The private supply is protected by means of a single check valve and gate valve. At the factory of the Parkhurst Woolen Company on Harrison street the supply for fire purposes is derived from a pond formed by impounding the flow of a small creek draining the southern part of the city. The fire service line is separated from the public mains by three check valves. At the Gloversville Leather Company's factory an auxiliary supply for fire purposes is derived from a small surface stream. The discharge main of the fire pump is separated from the city main by double-check valves.

In a report on an inspection of the supply dated June 21, 1921, the following recommendations were made:

> 1. That the city authorities continue their efforts protecting the quality of the water supply and maintain their policy of improving the conditions upon the various watersheds.
>
> 2. That the city authorities continue to operate the chlorination plant in a continuous and active manner in order that a safe, sanitary water supply may at all times be assured to the inhabitants of the city.
>
> 3. That the city authorities take steps to have the city main entirely disconnected from the mains used for fire purposes at the Gloversville Knitting Company, and all other factories provided with an auxiliary fire supply, or provide such connections with double-check and gate valves in accessible manholes in accordance with the general plans approved by this Department, a blue print of which is attached.

GLOVERSVILLE (Kingsboro Water Company)

An investigation of that portion of the public water supply of Gloversville furnished by the Kingsboro Water Company was made by Mr. Earl Devendorf, assistant engineer in this Department, on April 21, 1921. Gloversville is a city of approximately 23,000 inhabitants, and is located in the central portion of Fulton county, some 8 miles north of Fonda. A previous investigation of this supply was made in 1918 and a report thereon may be found on page 183, Volume 2, of the 1919 Annual Report of the State Department of Health.

The Kingsboro water supply is owned and operated by the Kingsboro Water Company, of which Mr. E. L. Heacock is president. It is estimated that approximately 5 per cent of the population of Gloversville receives water from the Kingsboro supply. The supply is derived from two open, shallow, spring-fed reservoirs. These reservoirs are located at the foot of a high hill and at a distance of approximately 1½ miles northwest of the city. The field above the north reservoir is used for pasture purposes. The field above the south reservoir is, however, owned by the company and has recently been reforested. During the warm months trouble has been experienced from algae growths occurring in these reservoirs and these growths have been removed by skimming.

In a report on an inspection of the supply dated May 12, 1921, the following conclusions were made:

> 1. That the public water supply as furnished by the Kingsboro Water Company is of a fairly satisfactory physical and sanitary quality.
>
> 2. That some slight trouble has been experienced at times due to the growth of algae in the spring-fed reservoirs.

It was, therefore, recommended:

1. That the officials in charge of the Kingsboro Water Company continue careful supervision of the supply to prevent any possible contamination of the supply.
2. That the officials endeavor to eliminate the algae growth by the judicious application of copper sulphate in the proportion of from 1 to 2 pounds per million gallons or approximately 1 ounce to each of the spring-fed reservoirs.

GRANVILLE

A reinspection of the public water supply of the village of Granville was made on April 1, 1921 by Mr. A. I. Howd, assistant engineer in this Department, previous investigations of this supply having been made by the Department in 1912, 1916 and 1917.

The village of Granville is located in the eastern part of Washington county adjacent to the New York–Vermont State line about 70 miles northeast of Albany. The population of the village is about 4,000, practically all of whom are served with water from the public supply. The waterworks are owned and operated by the village under the direction of the board of trustees.

The water supply is derived from the Mattawee river at a point in the eastern part of the village near the state line. The water flows through a pipe line by gravity to a pumping station in the village where it is chlorinated before being delivered to the consumers. The water is pumped directly into the mains, the surplus over consumption going to a storage reservoir from which the supply is drawn when the pumps are not in operation. The water consumption varies from about 400,000 to 500,000 gallons per day. There is no accurate method of obtaining the actual daily water consumption. The present investigation disclosed the fact that most of the recommendations of the previous report have been carried out. The rate of application of the chlorine has been increased and the amount applied is varied according to the pump in use. According to the statements of the attendant at the pumping station, however, the rate of application of the chlorine is not increased at times when the water is turbid.

In regard to the fact brought out in the previous report, that the chlorine apparatus did not operate properly at times of high water, it may be stated that a strainer was put on the feed pipe supplying water to the chlorinator which keeps sediment at times of high water from stopping up the pipes and which was said by the man in charge of the plant to remedy the unsatisfactory conditions.

Daily records are now kept at the pumping station showing the amount of water pumped, time of pumping, weight of chlorine cylinders, amount of chlorine applied and other desirable data. From these records it was learned that on the night of March 21, 1921, a leak developed in the chlorine apparatus around a connection. The flow of chlorine was stopped at 9:10 P. M. and the apparatus was not repaired until about 8 o'clock the following morning. During the time the chlorinator was out of use pumping of water into the mains and reservoir was continuous. It was stated by the attendant that on different occasions it has been necessary to shut off the chlorine apparatus while pumping has been going on. The attendant does not repair the apparatus but has to send for a man, which may account for some delay in repairing.

In a report upon an inspection of the supply dated April 26, 1921, the following recommendations were made:

1. That the village authorities carry out the recommendation of the previous report that has not been carried out, namely: that after rains and at times when the organic content of the water is high the rate of application of the chlorine be increased about 0.20 parts per million.
2. That the village authorities acquire at once apparatus for making the starch iodide or tolidin test for excess chlorine and that the attend-

ant in charge of the plant make daily tests of the treated water to determine whether or not the proper amount of chlorine is being applied to the water, and regulate the rate of application of the chlorine accordingly.

3. That the attendant at the pumping station make frequent and careful inspections of the chlorination apparatus and keep all connections tight so that it will not become necessary to shut down the chlorination apparatus while pumping, and that duplicate parts be kept on hand at all times.

4. That the village authorities have the scales repaired upon which the chlorine cylinder rests so that they will weigh accurately or that they provide new scales.

A reinspection of the public water supply of Granville was made on August 19, 1921, at which time it was learned that the recommendations of this Department in regard to providing new scales for the chlorine cylinders and the recommendation in regard to providing duplicate parts for the chlorination apparatus, have been carried out. No action, however, had been taken by the village authorities to acquire apparatus for making the starch iodide test for excess chlorine. In a letter to the village authorities they were urged to take immediate action to provide the necessary apparatus and make the test for excess chlorine daily in accordance with our recommendations.

GREENPORT

A reinspection of the public water supply of the village of Greenport, Suffolk county, N. Y., was made by Mr. Alfred Mullikin of this Division on August 9, 1921. Previous inspections of this supply have been made in 1916, 1919 and 1920 and the reports thereon published in the Annual Reports of the Department for those years.

Greenport, a village with a population estimated in winter at 3,100 and in summer at 5,000 is located on the main line of the Long Island Railroad about 96 miles east of New York City. Of the total population 80 per cent are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners. The water supply is derived from 2 dug wells located ½ mile west of the center of the village and pumped directly into the distribution system. The original supply of 2 dug wells and 8 driven wells has been excluded from the distributing system.

One of the new wells dug in 1919 is located about ¼ mile west of the main pumping plant near Moores' Woods. It is 15 feet in diameter and 30 feet deep, provided with a brick curbing and a flat wooden cover which is kept locked. There are no houses within ¼ of a mile of the well and apparently no sources of pollution.

The other well, dug in 1920, is located about 110 feet west of the main pumping plant. This well is constructed of brick and is 16 feet in diameter and 35 feet deep. The top of the well wall converges to a manhole which extends 3 feet above the ground surface and which is provided with a locked wooden cover. There seems to be no direct source of pollution in the vicinity of the well. An earth vault privy is located about 300 or 400 feet from the well.

The Long Island Railroad has a separate water supply which is used in addition to the village supply on passenger coaches for drinking purposes. This supply is obtained from a dug well located about 700 feet west of the railroad depot and 25 feet south of the railroad tracks. The well is constructed of brick and is about 6 feet in diameter and 20 feet deep. The top of the well is flush with the surface of the ground and is provided with a wooden cover. One earth vault privy is located about 125 feet from the well and the other is located about 200 feet from the well. The water is pumped from the well into a wooden tank having a capacity of about 35,000 gallons from which it is taken for use on the coaches.

The previous recommendations of this Department in regard to protecting the wells from contamination, the raising of the curbing of the old wells and the abandoning of the oil and waste water pit have not been carried out.

In a report dated October 27, 1921, the following conclusions were made:

1. That while the village water supply at the time of the inspection was of a fairly satisfactory sanitary quality it contained a very high chlorine content.
2. That the authorities in charge of the village water supply have not carried out the previous recommendations of this Department as embodied in this report with the exception that a privy at the main pumping plant has been removed.
3. That the 1919 dug well was receiving a slight amount of active contamination at the time the samples were collected.
4. That a privy located some 300 feet southeast of the plant is not provided with watertight containers.
5. That although the Long Island Railroad supply was of a fairly satisfactory sanitary quality at the time of the inspection, it is, as indicated by the analyses, receiving a considerable amount of pollution which, although largely oxidized and rendered harmless at present, may become active and dangerous under certain hydraulic conditions of the ground water, due to seasonal variations or to heavy draughts of the well. The supply is, therefore, to be looked upon with suspicion.

It was therefore recommended:

1. That the municipal authorities in charge of the water supply carry out at once such of our previous recommendations as have not as yet been acted upon.
2. That a careful sanitary patrol be made in the vicinity of the 1919 dug well to ascertain and eliminate the sources of contamination and if this is not possible that the supply be sterilized by the application of liquid chlorine.
3. That the Long Island Railroad Company carefully protect their dug well by raising the curbing a sufficient height above the ground to prevent surface wash entering the well.
4. That the sources of pollution in the vicinity of the railroad well be removed by providing watertight, removable containers for all privies within 300 feet of the well and properly removing and disposing of the contents of these containers at some remote point in a satisfactory manner.

HAMDEN

A reinspection of the public water supply of the village of Hamden. was made by Mr. W. J. Erickson, sanitary inspector in this Department, on May 10, 1921. Previous inspections were made of this supply in 1908, 1915 and 1919.

Hamden is an unincorporated village of about 350 inhabitants, located in the central part of Delaware county on the western branch of the Delaware river. The supply is owned and operated by Mr. Howard D. Youmans of Delhi. The public water supply is derived by impounding Launt Hollow brook in a reservoir located about a mile from the village. From this reservoir the water is delivered to the consumers.

The watershed of Launt Hollow brook above the reservoir is about 4 square miles in area. The higher sections are rather steep and wooded. The lower sections along the stream are almost entirely devoted to farming and dairying purposes. There are about 50 inhabitants on the watershed at present. The conditions are as described in the previous reports. The houses, barns and out-buildings are located mostly very near or at the edge of the main or tributary streams. Cattle are pastured at several points along the stream.

In a report on an inspection of the supply dated June 10, 1921, the following recommendations were made:

1. That immediate steps be taken to remove all existing sources of pollution on the watershed of Launt Hollow brook tributary to the reservoir and to guard against their recurrence in the future.
2. That should any difficulty be experienced in removing the sources of pollution, the owner apply to this Department for the enactment of rules and regulations for the sanitary protection of the water supply.
3. That on account of the numerous sources of contamination and the impracticability of removing all these sources of contamination, the owner of the supply consider the abandonment of the present supply and the development of a safe and adequate supply.
4. That an expert on water supply development be employed to advise as to the best method of developing such a supply.

HARTWICK

A reinspection of the public water supply of the village of Hartwick, Otsego county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department on March 1, 1921. A previous inspection of the supply was made by this Division in the year 1913 and the report thereon published in the Annual Report of the Department for that year.

Hartwick is located about 18 miles north of Oneonta. The population is 550 about 80 per cent of whom receive the public water supply. The waterworks are owned and operated by the Hartwick Water Works Company of which Mr. J. M. Bush is president.

The water supply is derived from Barney Gulf brook about ½ mile east of the village, from a spring and from Cook pond. A deep well, located near the spring is used in case of emergency. The water flows by gravity to a distributing reservoir and thence to the village.

The Barney Gulf brook has a drainage area above the intake of about ⅛ of a square mile and is uninhabited. Cook pond above the intake has a watershed of about the same area on which is located one farm, the sanitary condition of which was apparently satisfactory. A ditch has been constructed near one side of the pond to divert the drainage of the hill nearby to a point in the brook below the intake. Ice is cut from the pond during the winter. The top of the basin of the spring is flush with the surface of the ground and it is possible that surface water may enter it. The deep well used as an auxiliary supply is located on a hill side remote from any habitation and should furnish a water of satisfactory sanitary quality.

No action has been taken by the village authorities on our previous recommendations in regard to the construction of a sedimentation basin, in regard to fencing the pond and distributing reservoir and in regard to requesting the enactment of rules and regulations for the protection of the supply.

In a report dated March 18, 1921, the following recommendations were made:

1. That the present careful supervision of the watershed be maintained.
2. That the wall of the Willis spring be raised a foot above the surface of the ground to prevent the entrance of surface wash and that the area around Cook pond be fenced off to prevent trespassing.
3. That the water company construct an impounding reservoir in Barney Gulf brook at a point near the present basin to provide storage and an opportunity for sedimentation.
4. That a competent engineer be retained by the water company to advise them as to the construction of the impounding reservoir and as to the most practicable method of removing the color.

HERKIMER

An investigation of the public water supply of the village of Herkimer was made by Mr. Earl Devendorf, assistant engineer in this Department, on November 24, and December 1, 1920. Previous investigations of the public water supply were made in 1917 and 1919 and reports thereon may be found in the Annual Report of the State Department of Health for the respective years. An additional investigation of the supply in connection with the typhoid fever outbreak was made in 1918 and a report thereon may be found in the Annual Report of the State Department of Health for 1919.

Herkimer is a village of 10,862 inhabitants according to the recent census and is located in the southern part of Herkimer county on the Mohawk river. A system of public sewers is provided throughout the village which discharges the sewage without treatment into the Mohawk river.

The water supply is owned by the village and operated under a municipal commission of which Mr. Arthur T. Clark is superintendent. The supply is derived by pumping from a series of driven wells known as the Harter Street wells, which are located in a sparsely settled portion of the village, and also from infiltration galleries, located northeast of the village near the West Canada creek. The water is pumped into the village distribution system, the excess over consumption going to a steel standpipe located on a hill north of the village. Practically all of the inhabitants are furnished with the public water supply. The total amount of water pumped as estimated from the pump strokes varies from 800,000 to 1,000,000 gallons per 24 hours.

As originally developed in 1918, there were 2 pumping stations at Harter street, which were connected to 12 driven wells located within an area 800 feet in length and some 100 feet in breadth. During the past year, however, one of these pumping stations has been removed and at present there are 11 wells connected to a steel vacuum tank 4½ feet in diameter and 12 feet in length having a capacity of approximately 14,500 gallons. The suction of the 8 x 10 triplex Gould pump is connected to this tank and discharges into the public distribution system.

The main pumping station which is located near the infiltration galleries along the West Canada creek also houses the municipal electric lighting plant. At the time of the inspection the construction of a new boiler house to accommodate two 400 horsepower Babcock & Wilcox boilers was partially completed. A new pumping station has been added adjacent to and north of the old pumping station and at the time of the inspection two 6-inch Manistee iron works centrifugal pumps, operated by 40 horsepower G. E. motors, to which they were directly connected, were in operation. These pumps are connected to a new infiltration gallery which has been constructed during the past summer some 500 feet north of the pumping station. This infiltration gallery is approximately 100 x 5 x 7 feet in dimensions. A wooden crib made up of hemlock lumber was first constructed in the bottom of the excavation which was approximately 23 feet below the surface. The wooden crib was first surrounded with large stone and then the excavation was covered with soil to the ground elevation.

In addition to the two centrifugal pumps, 2 steam pumps are to be located in the new pumping station and are to be connected to the old infiltration gallery. It is also planned to cross-connect these steam pumps with the piping from the new infiltration gallery in order to make available the 2 sources of supply for pumping either by electricity or by steam. The 1 pump, located on Harter street, was being operated at the time of the inspection only 16 hours per day and it is expected that when the changes contemplated at the main pumping station are completed, it will be unnecessary to use water from the Harter street wells. This pump will then be held for emergency use only.

During the past year the village authorities in charge of the public water supply engaged the Pitometer company of New York City to make a survey of the village distribution system for the purpose of determining first, the amount of slippage of the various pumps, second, the measurement of the total consumption and third the subdivision of the system into small sections in order to localize leakage and investigate the high rates of consumption.

The minimum rate of consumption was found to be 500,000 gallons occurring between 2 a. m. and 3 a. m. This rate includes the consumption of the New York Central and Hudson River Railroad, amounting to 90,000 gallons per day giving a rate, exclusive of industrial consumption, of 410,000 gallons per 24 hours. The leakage was found to amount to 361,000 gallons per 24 hours and consisted largely of service leaks. The present daily consumption is, therefore, as based on the record obtained on September 21 and 22, 1920, 600,000 gallons, exclusive of the industrial consumption or 57½ gallons per capita. The industrial consumption amounts to 212,000 gallons per 24 hours, giving a total consumption, as determined on the day of the test; of 812,000 gallons per 24 hours. The Pitometer company estimated that the village could save approximately 250,000 gallons per day by repairing the service leaks throughout the village.

At the time of the inspection complaints were received regarding the peculiar taste occurring in the village water. As a result of the investigation made on November 24 it was found that the new well had been in service some 2 weeks previous to the time of the inspection. A crib, made up of about 10,000 feet of hemlock lumber, was used in the construction of the well. The peculiar taste became less about November 24 and disappeared previous to the second inspection on December 1. It is alleged that the cause of the tastes noted was due to the new hemlock lumber used in the construction of this crib. At any rate information has been received from the authorities in charge of the water supply that no further trouble regarding tastes and odors have occurred in the public water supply.

At the time of the inspection chlorine was being applied at the Harter Street station at the rate of about 1½ pounds per 24 hours or, with the amount of water being pumped, at the rate of about .6 p.p.m. At the main pumping station chlorine was being used at the rate of about 7 or 8 pounds per 24 hours, giving an average rate of application of about 1.2 p.p.m.

At the time of the inspection it was learned that the new supply, which the village favorably voted upon in 1918 and which was to be obtained from Mill creek at a point near Gravesville, some 18 miles northwest of Herkimer, has not as yet been started although the money is available. This delay has been due to the desire on the part of the village authorities to await a reduction in the present high prices of both the material and construction costs.

At the time of the inspection it was learned that the intake with the conduit laid across the bed of the West Canada creek, which was formerly used as an auxiliary supply by pumping onto the surface of the ground surrounding the wells and by the utilization of 2 small sand filter units, the effluent from which was allowed to pass into the old infiltration well, has been discontinued since about the 1st of December, 1920. The direct connection, however, with the creek has not been used for some time. It is not expected with the new infiltration gallery in service that it will be again necessary to use sand filters in connection with the West Canada Creek water.

In a report dated January 14, 1921, upon an inspection of the supply the following recommendations were made.

1. That the authorities in charge of the public water supply continue the careful operation of the chlorination plant in order that a water of satisfactory sanitary quality may at all times be furnished the residents of the village.
2. That the use of the Harter Street wells, which, as pointed out in a previous report, are not very satisfactorily located, be discontinued unless a shortage of water should occur in the main source of supply, and for this purpose the pumping apparatus and chlorination plant should be held in readiness.
3. That the proposed plan of cross-connecting the steam and electric pumps so as to be able to pump with either electricity or steam power from either the old or new infiltration galleries be carried out at the earliest possible moment.

4. That the authorities in charge of the public water supply eliminate at the earliest moment the leakage which, as shown by the recent pitometer survey, mostly consists of service leaks.

5. That in case additional sources of water supply are necessary the village authorities follow the previous recommendations of this Department with respect to the construction of a 1 or 2 million gallon reservoir on the hill back of the village, this reservoir to store chlorinated creek water for fire purposes or other emergency and to supply any deficiency or consumption over that furnished by the present ground water supply, the ground water supply being pumped directly to the distribution system by ordinary use.

HICKSVILLE

A reinspection of the public water supply of the unincorporated village of Hicksville, Nassau county, N. Y., with special reference to an abandoned well now being used as a cesspool, about 500 feet northeast of the water plant was made by Mr. Henry Ryon, assistant engineer in this Department, on June 4, 1921.

Previous inspections of the supply were made by this Department in 1915, 1918 and 1920, and the reports thereon may be found in the Annual Reports of the Department for those years.

Hicksville is located about 27 miles east of New York City. The present population of the village is estimated at about 5,000, of which about 50 per cent are served with water from the public supply. The waterworks are owned and operated by the Nassau County Water Company, of which Mr. W. J. Drummond is president.

The water supply is derived from 2 drilled wells located under the pumping station and is delivered by pumping into 6 steel pressure tanks, from which it flows into the distributing system. The daily water consumption is estimated at about 190,000 gallons per day or 76 gallons per capita per day. The water is not treated. The two 8-inch wells are drilled in the bottom of a 9-foot brick-walled, cylindrical pit about 55 feet deep, located in the basement of the pumping station, the floor of which is some 8 feet below the surface of the ground, and extend to a total depth of about 115 feet below the surface. The pit was dry at the time of the inspection. The tops of both wells are sealed.

The pump room and the grounds around the plant were in fair sanitary condition. A dry closet is provided for the attendant's family which lives in the upper story of the pumping station. It is said that the contents of the containers of this closet are burned under the boiler. The sink wastes are discharged into a small leaching cesspool just outside of the building. There is a privy on the property about 100 feet east of the building, but it is apparently not in use. There are 8 or 10 houses within 300 feet of the wells, several of which were apparently new, indicating that the district is being rapidly improved. There is no sewerage system in the village and these houses all use privies or cesspools.

About 500 feet northeast of the plant is an old brick-walled well, said to be 10 feet in diameter and 80 feet deep, which was formerly used in connection with a brewery, but which is now being used as a cesspool. Although it formerly yielded a considerable amount of water it is now dry, a condition which is attributed by the inhabitants to the pumping of the well at the water works. The elevation of the ground water near the water plant is not definitely known, but its greatest depth, even during pumping, can be estimated from the fact that the cylinder on the pump is located about 60 feet below the surface of the ground, which would indicate that it probably cannot draw water from a depth of over 80 feet. Since the level at the well would probably be considerably lower than that 500 feet away it is difficult to see how the well would drain the cesspool unless its depth is somewhat less than 80 feet at which it is estimated. The fact, however, that the wells at the water plant and the abandoned well now being used as a cesspool are both probably in the same strata of water-bearing sand and gravel and only about 500 feet apart, makes it seem desirable that the well now being used as a cesspool should be cleaned and filled with earth in order to preclude the possibility of any pollution from it reaching the well of the public water supply.

The results of the analyses of the water taken at different times during the past few years indicate very high nitrates and very high and increasing quantities of chlorine, which show that polluting matter is reaching the well, and although there are numerous sources in the vicinity from which this pollution may come, it seems probable that this well or cesspool is one of them.

Numerous complaints have recently been received regarding tastes and odors in the water and also regarding an oily film on the water and a dark-brown sediment. From the description given these troubles appear to be due to iron in the water and possibly to growths of crenothrix. The analyses of the water bear out this conclusion. The iron is apparently to a large extent taken up from the pipes. Periodic flushing would undoubtedly improve conditions materially, although it is possible that an iron removal may be required to relieve the condition entirely.

In a report upon a reinspection of the supply, dated June 15, 1921, the following recommendations were made:

1. That the authorities in charge of the water supply develop a new source of supply, located at a considerable distance from the built-up portion of the village and free from all possible pollution.
2. That, pending the development of such a supply, all the privies and cesspools in the immediate vicinity of the plant be made watertight so as to prevent contamination of the supply, or a sewer system for the village constructed and all privies and cesspools abandoned and, if necessary, the water treated by the continuous application of liquid chlorine.
3. That the quality of the water be carefully watched and should evidence of active contamination be found the water be immediately sterilized by the continuous application of a suitable amount of liquid chlorine.

HOMER

An inspection of the public water supply of the village of Homer, Cortland county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on December 10, 1920. Previous inspections of the supply were made by this Division in 1912 and 1915 and the reports thereon published in the Annual Reports of the Department for those years.

Homer is located about 2 miles north of Cortland and has a population of 2800, of whom 70 per cent are served by the public water supply. The village has no sewerage system, the houses being served by cesspools. The waterworks are owned and operated by the village under a board of water commissioners, of which Mr. O. B. Andrews is president.

The water supply is derived from 4 driven wells located in the northwestern part of the village, and is pumped directly into the distribution system.

The wells are constructed of concrete and are covered with earth or planks. Within 500 feet of the wells there are 6 houses which have been provided with privies having concrete vaults and concrete cesspools for the disposal of kitchen wastes. Some of the privy vaults in the vicinity of the wells were ready to overflow and needed cleaning.

The previous recommendations of this Department, in regard to maintaining a careful oversight over the supply and in regard to filling the abandoned well with clean gravel or other suitable material and the discontinuance of dumping rubbish in the vicinity have been carried out. In a report dated January 25, 1921, the following recommendations were made:

1. That the authorities continue their careful supervision of the waterworks system.

2. That the contents of the privy vaults within 500 feet of the wells be removed at more frequent intervals and never allowed to reach a height of more than 6 inches below the top of the vaults.

HONEOYE FALLS

A reinspection of the public water supply of the village of Honeoye Falls, Monroe county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on March 21, 1921. A previous inspection of this supply was made in 1915 and the report thereon published in the Annual Report of the Department for that year.

Honeoye Falls is located about 15 miles south of Rochester and has a population of 1300, about 65 per cent of which is served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of trustees, of which Mr. James Heath is president. The water supply is derived from two driven wells and a collecting well from which water is pumped into the distribution system.

The wells are located in a well-developed section of the village. There are from 8 to 10 privies visible within 100 to 300 feet or more from the wells.

The previous recommendations of this Department in regard to acquiring land around the wells, eliminating all sources of pollution, making cesspools watertight and providing privies with watertight containers, and making analyses of the water to detect the presence of active contamination, have not been carried out. An apparatus for the sterilization of the supply, with liquid chlorine, however, was installed in 1917.

In a report, dated April 21, 1921, the following recommendations were made:

1. That the municipal authorities in charge of the water supply immediately take steps to secure a new supply from a source satisfactorily located and free from possibility of pollution.

2. That, pending the installation of such a supply:

   (a) The authorities eliminate, as far as possible, all sources of pollution by providing watertight containers for all the privies near the wells, making all the cesspools in the vicinity watertight, removing the contents of the containers and cesspools to a remote place and disposing of them in a satisfactory manner when necessary, and maintaining such privies, cesspools and the surrounding area in sanitary condition.

   (b) The supply be sterilized by the continuous application of liquid chlorine at a rate determined by daily tests of the treated water by the plant operator for excess chlorine, in accordance with the instructions issued by this Department, but never less than 0.25 p. p. m.

In the connection with an outbreak of typhoid fever at Honeoye Falls a reinspection of the water supply was made on May 24, 1921. While it was found that the plant was not operating entirely satisfactorily, there was nothing to indicate that the water supply was connected with the typhoid outbreak. It was found, however, that the chlorination apparatus was operating satisfactorily and chlorine was being applied at the rate of a little less than 0.3 parts per million.

HOOSICK FALLS

A reinspection of the public water supply of the village of Hoosick Falls was made on August 22, 1921, by Mr. A. I. Howd of this Department, previous inspections of this supply having been made in 1912 and 1918. The village of Hoosick Falls is located in the northeastern part of Rensselaer county, about 40 miles north of Albany. The population of the village is 4,896 according to the census of 1920, about 80 per cent of whom are served with water from the public supply. The waterworks are owned and operated by the village under the direction of a board of trustees of which Mr. Salem H. White is president.

The water supply is derived from four dug wells located on low land near the Hoosick river, about ½ mile south of the village. All of the wells are connected but only one is provided with a suction pipe through which water is drawn to the pumping station, where it is chlorinated before being delivered to the consumers. The water is pumped directly into the mains, the surplus over consumption going to a storage reservoir from which the supply is drawn when the pumps are not operating. The water consumption is estimated at about one million gallons per day or some 250 gallons per capita per day. From the recent inspection it appears that some of the recommendations of the previous report have been carried out. The brick walls of the wells have been raised about 3 feet and the sides covered with concrete. The roofs of the wells have been repaired and are in general in a satisfactory condition. The regular water supply has been ample and it has not been necessary to pump from the river. A chlorination apparatus has been installed but at the time of the inspection had been out of use for several weeks, due to the fact that one of the connections had corroded. No scales are provided for weighing the chlorine cylinder in order to check the operation of the manometer on the chlorination apparatus. No records are kept of the amount of water pumped and of the amount of chlorine applied to the water. No tests are made for excess chlorine in the water in order to determine if the chlorine is being applied in proper quantities. No action has been taken on our previous recommendations that the village acquire land around the wells and surround them with dikes nor that in regard to diverting the flow of the brook carrying polluted water from the slaughter house, nor that the land around the well be fenced.

In a report on an inspection of the supply dated November 19, 1921, the following recommendations were made:

1. That the village authorities in charge of the public water supply carry out at once such of our previous recommendations as have not yet been acted upon, namely: that the village acquire land around the wells and surround them with dikes; that the flow of the brook carrying polluted water from the slaughter house be diverted from the wells and that the land around the wells be fenced.
2. That the chlorination apparatus be repaired and put into operation as soon as possible and continuously operated in an effective manner in order that a water of safe sanitary quality may at all times be furnished to the residents of the village.
3. That duplicate parts of the chlorination apparatus be obtained and kept on hand at all times in order to preclude any interruption in the sterilization of the public water supply.

HORNELL

A reinspection of the public water supply of the city of Hornell, Steuben county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on April 20, 1921. Previous inspections of this supply were made by this Division in the years 1908, 1909, 1913, 1916, 1917, 1918 and 1919, and reports thereon published in the respective Annual Reports of the Department for those years.

Hornell has a population estimated at 15,400, practically all of whom are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of public works, of which Mr. Fred A. Robbins is president.

The water supply is derived from three impounding reservoirs located on Carrington, Eveland and Seeley creeks, 5½ miles north of the city. The water is treated in a filtration plant consisting of six New York Continental horizontal filters of the pressure mechanical type. Alum is used as a coagulant. The filtered water is sterilized with liquid chlorine by means of two solution feed automatically controlled Wallace and Tiernan chlorinators.

The previous recommendations of this Department in regard to careful operation of the purification plant, the maintenance of sanitary conditions on the watershed and the control of algae growths by the use of copper sulphate have been carried out. No action has been taken, however, on the recommendation in reference to the construction of a coagulation and sedimentation basin for the treatment of the raw water.

In a report dated June 18, 1921, the following recommendations were made:

1. That the city authorities give careful attention to the operation of the purification plant in order to obtain as high a degree of efficiency as possible and construct a suitable coagulation and sedimentation basin for the treatment of the raw water before it enters the filters.
2. That the rate of application of the chlorine be determined by the use of the starch iodide test for excess chlorine.

INLET

An investigation of the water supply of the New Arrow Head hotel and an outbreak of diarrhea at Inlet, Hamilton county, N. Y., was made on September 2 and 3, 1921, by Mr. A. I. Howd of this Division.

Inlet is located in the town of Inlet, in the northwestern part of Hamilton county. It is at the southeast end of Fourth lake of the Fulton Chain of lakes, and is an attractive summer resort. A number of hotels and cottages are located at Inlet. According to the census of 1920, the population is 160, but during the summer season, the population is very much larger.

The investigation was made as a result of a communication from the proprietor of the New Arrow Head hotel in which it was stated that there was a slight epidemic of diarrhea at Inlet. The New Arrow Head hotel has a capacity of 100 guests, the population at the time of investigation being about 75. The outbreak, which was centered principally around the New Arrow Head hotel, begun about August 7, continued for about three weeks, and subsided quite rapidly at the end of the third week. During this period it was estimated that there were about 100 cases at the New Arrow Head hotel. At the Parquet, a boarding house and hotel nearby having a capacity of about 30 guests, it was estimated that there had been about 10 cases. Other hotels in the vicinity also had a number of cases.

The drinking water supply of the New Arrow Head hotel is obtained from springs in the mountain about one mile south of the hotel. The water from this source is piped to a tap in the kitchen and to a tap in the hall on each floor of the hotel. The water supply furnished to the wash bowls and toilets in the rooms and used for general purposes at the hotel, is obtained from Inlet creek at a point near the hotel. The sewage from the hotel is discharged into a double compartment septic tank about 10 feet by 20 feet by 5 feet deep, located in the rear of the hotel. The effluent from the tank flows through a pipe line into Inlet creek a few hundred feet above the intake of the water supply.

The waters of the spring from which the drinking water supply is obtained, flow over the ground for a short distance into a small reservoir formed by the construction of a masonry dam about 15 feet wide and 3 feet high across a narrow ravine. The intake consists of a 2-inch pipe provided with a strainer and is located near the bottom of the reservoir. The water flows by gravity through a 2-inch galvanized pipe to the hotel. The spring and reservoir are located in the woods far from any habitation, and apparently free from any permanent sources of pollution. The springs and reservoir are not fenced in to prevent the access of animals and people and the supply may, therefore, receive chance or wilful pollution. The amount of water that comes from this source is relatively small. At the time of the inspection there was only a small amount of water in the reservoir, the water being drawn down to the elevation of the intake pipe.

Inlet creek connects Fifth and Fourth lakes. From a point in the creek west of the Arrow Head, water is pumped into the mains at the hotel. This water is used for general domestic purposes at the hotel. It is the only water available in the guest rooms of the hotel and water is also available from taps in the kitchen. There are a number of different taps in the kitchen and apparently no marks or methods to distinguish which taps should or should not be used for drinking purposes. It was found at the time of the inspection that the help in the kitchen were ignorant as to the sources of water from the different taps.

The waters of Inlet creek are subject to considerable direct sewage pollution above the intake of the Arrow Head water supply. The nearest source of pollution is the discharge of sewage from the hotel itself. The effluent from the septic tank as pointed out above discharges into Inlet creek a few hundred feet above the water supply intake, and a few hundred feet above the Arrow Head, the effluent from the septic tank serving the Parquet hotel, discharges into Inlet creek. It is evident therefore that the water supply obtained from this source is considerably polluted and should not be used for any purposes, except possibly, flushing toilets, washing floors and other similar purposes. The water obtained from the creek should not be used for cooking purposes, for washing dishes or for any other purpose in the kitchen except washing floors. Signs are provided over the wash bowls in some of the rooms warning the guests not to use the water from the taps in the rooms for drinking purposes. One of the guests was interviewed who was taken sick shortly after his arrival at the hotel. He stated that the day that he arrived at the hotel he drank water from a tap in his room. The water is apparently used by guests for brushing teeth and washing and is therefore a source of danger and menace to health.

Another water supply, known as the Kenwell supply, is obtained from a small brook about 2 miles south of Inlet. This supply furnishes water to the New Arrow Head, the Parquet and other hotels and cottages at Inlet. The brook flows through swampy wood-land, apparently free from any permanent source of pollution, but subject to contamination from trespassers and animals on the watershed. The water from this source is highly colored and at times of heavy rains is very turbid.

The water supply for "The Wood" is privately owned and obtained from springs in the mountain. The owner of "The Wood" denied that there had been any cases of diarrhea or bowel trouble at his hotel.

In a report upon the inspection dated September 27, 1921, it was pointed out that the water supplies used by hotels and camps at Inlet are generally obtained from unsatisfactory and polluted sources or from sources unprotected from accidental or wilful pollution from trespassers and animals. The waters are generally high in color probably due to the vegetable matter with which the waters come in contact and are generally turbid after rains due to the fine wood-dirt in the beds of the shallow streams.

Due to the fact that, with a few exceptions, all the cases had left Inlet, it was difficult to trace and find the real cause of the outbreak. The possibility of the epidemic being due to such factors as milk, ice cream, vegetables and shellfish was considered and each factor practically eliminated. The general unsatisfactory condition of some water supplies and the highly polluted condition of others seems to be the real cause of the outbreak.

It was, therefore, recommended:

1. That the water supply derived from Inlet Creek and pumped into the mains at the New Arrow Head Hotel at Inlet, N. Y., be abandoned or the water so obtained be subject to filtration and sterilization before use.
2. That the water supply derived from the spring and reservoir in the mountain and used in the New Arrow Head Hotel for drinking purposes, be protected from accidental or wilful contamination by surrounding the reservoir and spring by a man and animal proof fence.
3. That the reservoir be cleaned of all vegetable matter as often as is necessary.

4. That steps be taken to improve the sanitary and physical quality of the Kenwell supply by protecting the stream and intake from trespassers and animals and by cleaning the stream of vegetable matter.

5. That the direct discharge of sewage from hotels, cottages and other places at Inlet into Inlet Creek be prohibited.

6. That the owners of the New Arrow Head Hotel, The Parquet, and any other hotels and cottages discharging sewage directly into Inlet Creek, be required to provide proper disposal works for the treatment of sewage from their properties, plans for which should be submitted to the state engineer and surveyor for approval, and permit for discharge of sewage from such works should be obtained from this Department in accordance with the provisions of chapter 510 of the Laws of 1921.

IRVINGTON

A reinspection of the sanitary condition of the public water supply of the village of Irvington was made by Mr. W. J. Erickson, sanitary inspector in this Department, on December 9, 1920. A previous inspection was made in 1916 and the report thereon may be found published on page 418 of the 37th Annual Report of this Department.

Irvington is an incorporated village of about 2,700 inhabitants located in the southern part of Westchester county on the west shore of the Hudson river about 23 miles north of New York City. The village is served by a public sewer system which has 3 outlets into the Hudson river into which the sewage is discharged unpurified. The public water supply, which is owned by the village under the direction of a board of water commissioners, is derived from a small stream impounded in a storage reservoir located about a mile east of the village. From this reservoir the water flows by gravity to the lower section of the village, roughly, that section west of the old Croton aqueduct.

The water for the upper section is supplied from a second or distributing reservoir located on a hill a little to the south of the first reservoir. The water is pumped to this distributing reservoir and thence distributed by gravity.

The average daily consumption is 400,000 gallons. A 4-inch cross connection has been made with the main of the Consolidated Water Company of Suburban New York in order to provide an auxiliary supply for use in time of drought or in case of a breakdown in the system. The storage reservoir is formed by the construction of an earthen dam across a small stream. The area tributary to the reservoir is about 300 acres, all of which has been purchased by the village. It is uninhabited and signs have been posted to warn against trespassing.

In a report on an inspection of the supply dated January 17, 1921, the following recommendations were made:

1. That the village authorities maintain strict supervision over the watershed in order to detect and prevent or abate any act or source of contamination found to occur.

2. That should it be found difficult to control the watershed so as to prevent all contamination the village consider the installation of apparatus for the sterlization of the supply by liquid chlorine.

ITHACA

A reinspection of the public water supply of the city of Ithaca, Tompkins county, N. Y. was made by Mr. Alfred Mullikin, a representative of this Department, on May 31, 1921. A previous investigation of this supply was made by this Department in the year 1915, and a report thereon was published in the Annual Report of the Department for that year.

Ithaca is located on the Delaware, Lackawanna and Western, and the Lehigh Valley Railroad. The present population is estimated at 17,000. Of the total population some 95 per cent are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of the board of public works. The water supply is derived from Six Mile creek, the water of which is impounded in a large reservoir having a capacity of 350,000,000 gallons, located at Potters Falls about two miles southeast of the city. From this reservoir the water flows by gravity to a mechanical filter plant located about three-quarters of a mile southeast of the center of the city. After filtration the water is delivered in part by gravity and in part by pumping to the distribution system. There are three distributing reservoirs, one at Mitchell street and one located at West Hill, one clear water reservoir adjoining the filter plant. Due to the topography of the city the distribution system is divided into two zones, forming a high and low pressure system. Water from the Mitchell street and East Ithaca reservoirs is supplied to the high pressure system. The average daily water consumption is approximately 2,500,000 gallons of which some 500,000 gallons are used by the large consumers leaving a daily domestic consumption of some 2,000,000 gallons or 117 gallons per capita. Since the last previous inspection the following changes have been made: At the filter plant, Wallace and Tiernan chlorination apparatus has been installed, together with a rotary air compresser for supplying compressed air used in washing the filters. New equipment has been provided at the pumping station.

The watershed of Six Mile Creek above this reservoir is approximately 45.3 square miles. The greater part of the population is scattered along the numerous highways which traverse the area. Pollution may enter the supply from the two railroads which traverse the watershed. There are, also two villages — Brocton, having a population of 320 and Slaterville, having a population of 397 — located on the watershed. Rules and regulations for the protection from contamination of the watershed were enacted in the year 1903, and frequent inspections of the shed are made by the authorities to discover and eliminate any possible sources of pollution. From the impounding reservoir the water flows by gravity to the filter plant, where it is mixed with aluminum sulphate. The water then flows into two coagulating basins operated in parallel. From the coagulation basins the water flows to the six filters, which are of the gravity mechanical type. After passing through the filters the water is sterilized by the application of liquid chlorine before it enters the clear water reservoir. From the clear water reservoir part of it flows to the low level district of the city and the remainder flows to the Van Natta pumping station where it is pumped into the distributing reservoirs of the high level district. Aluminum sulphate is fed under normal conditions at the rate of about 0.5 grains per gallon. This amount is increased in accordance with the turbidity of the water.

At the time of the inspection, water was passing through four of the units at the rate of 154,000,000 gallons per acre per day. The filters are washed when the loss-of-head reaches about 9 feet. The average filter run is about 45 hours. At the time of the inspection chlorine was being applied at the rate of 0.191 parts per million.

Daily routine analyses of the water are made by the superintendent in a small complete laboratory at the filtration plant. The analyses consist of examinations for turbidity, alkalinity, gas production and bacterial counts on agar and gelatin plates in both the raw and filtered water. The city authorities have also engaged the services of a consulting chemist to supervise the operation of the purification plant.

In a report on an inspection of the supply dated August 15, 1921 the following conclusions were made:

1. That at the time of the inspection the purification plant was being operated in an efficient manner and was producing a water of satisfactory sanitary quality.

2. That the authorities in charge of the water supply have carried out the previous recommendations of this Department.

It was therefore recommended:

1. That the authorities in charge of the water supply of the city of Ithaca continue to maintain careful supervision over the conditions on the watershed from which the supply is derived and over the operation of the purification plant.
2. That as an aid in determining the proper amount of chlorine to be applied to the filtered water, daily tests for excess chlorine be made by means of the starch iodide test, in accordance with the instructions enclosed.

JAMESTOWN

A reinspection of the public water supply of the city of Jamestown was made by Mr. W. J. Erickson, sanitary inspector in this Department, on December 17, 1920. Previous inspections were made of the supply in 1912 and 1915, reports upon which are published in the Annual Reports of this Department for the respective years.

Jamestown, a city of about 38,000 inhabitants, is located in the southern part of Chautauqua county, about 2 miles from Chautauqua lake. The city is provided with a sewer system which empties into the Chadakoin river below Falconer. The water supply is owned by the city and operated by the board of water and light commissioners, of which Mr. Lyman P. Hapgood is superintendent. The supply is derived from 15 driven wells located about 2 miles northeast of the city in the valley of the Cassadaga creek near its junction with the Chadakoin river. From these wells the water is syphoned into a receiving well, from which it is pumped to a reservoir in the rear of the Buffalo street pumping station. Thence it is pumped to the distribution system and to the new reservoir on English hill. The consumption varies from 3 to 3.5 million gallons daily. Of this amount the railroads use about 13,000 gallons for drinking water. The Erie railroad uses creek water for industrial purposes, but it is said that no cross connection exists between this and the city supply.

The Cassadaga creek has a watershed area of 140 square miles. During floods the stream overflows its banks and covers the area in which the wells are located. There are three or four cross connections with local industrial supplies which are derived from Chadakoin river. These are said to be provided with double check valves.

To augment the present supply the city is at present constructing a new pumping station and wells 2 miles up the valley from the present Levant plant. There are to be 10 siphons and 10 air wells.

In a report on an inspection of the supply dated February 10, 1921, the following conclusions were made:

1. That the public water supply of Jamestown was of a reasonably satisfactory sanitary quality at the time of the inspection.
2. That the quality of the supply is endangered by the presence of cross connections with industrial supplies.

It was therefore recommended:

1. That the city authorities continue to maintain a careful oversight of the sanitary condition of their water supply, especially during the flooding of the meadows in which their wells are located.
2. That the city authorities investigate the industrial supplies in order to locate any cross connection with the city supply and to eliminate the same if practicable, and that if not practicable to eliminate these cross connections they be provided with double check valves in accordance with the general plan approved by this Department.

JOHNSTOWN

A reinspection of the public water supply of the city of Johnstown was made on January 4, 1921, by Mr. A. I. Howd, assistant engineer in this Department. Previous investigations of this supply have been made by the Department in 1914 and 1918.

The city of Johnstown, located in the southern part of Fulton county, has a population of about 11,300, approximately 95 per cent of which is served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners, for which Mr. L. Hillabrandt is superintendent. The water supply is derived from Cold brook, Warren brook and Cork Center brook, streams located a few miles west of the city.

Since the previous inspection a number of improvements have been made in the waterworks system. The dam of the old Cork Center reservoir has been raised, increasing the capacity of the reservoir from 700,000 to about 2,000,000 gallons. The new Cork Center storage reservoir, which was in process of construction at the time of the previous investigation, has been completed and put into use. This reservoir, which is formed by the construction of the dam across Cork Center brook about ½ mile above the old Cork Center reservoir, has an estimated capacity of 160,000,000 gallons. The dam was constructed by earth fill and has a concrete core wall.

The watersheds tributary to Warren and Cold Spring Brooks reservoirs are relatively small, are unpopulated and are not crossed by highways. There is little opportunity for contamination of the supply obtained from this source. The watershed above the intake of the Cork Center supply is uninhabited but is crossed, however, in different places by highways. It was noticed at one point where a highway crossed the brook entering the reservoir that a path had been made down to the stream by automobilists, undoubtedly to obtain water. This source of supply may, therefore, especially during the summer, be subject to accidental or wilful pollution from trespassers on the watershed.

In August, 1918, the city installed an apparatus for the sterilization of the supply by liquid chlorine. The apparatus is a manual control, direct feed type M D B chlorinator, manufactured by Wallace & Tiernan. Scales are provided under the chlorine cylinder for determining the amount of chlorine applied to the water. The manometer of the apparatus was not operating at the time of the inspection.

In a report dated February 7, 1921, the following recommendations were made:

1. That the authorities in charge of the water supply continue their careful and effective patrol of the watersheds of the streams from which the water supply of the city of Johnstown is obtained.
2. That the authorities in charge of the water supply continue to operate the chlorination apparatus with care and efficiency at all times.
3. That the manometer of the chlorinator be repaired and kept in operation.
4. That daily tests be made for excess chlorine, so that the proper amount of chlorine may be applied at all times.

The latter part of October, this Department was notified that, due to numerous complaints of tastes and odors from the water, the water commissioners of Johnstown had ordered the chlorination of the water supply discontinued. An investigation was immediately made by this Department on October 28, 1921, and a report dated November 14, 1921, was prepared, which pointed out the following facts:

1. That the physical condition of the water supply of the city of Johnstown was very unsatisfactory, due to the objectionable odor and tastes of the water supply caused by the presence of aquatic growths in the reservoirs.

2. That the tastes and odors in the city water were not due to the very small amount of chlorine applied, which in itself was probably insufficient to properly sterilize the supply.
3. That, while the authorities in charge of the water supply have in part carried out the previous recommendations of this Department in installing a chlorination apparatus, the operation of this apparatus was discontinued on October 25, 1921, by order of the board of water commissioners.
4. That the discontinuance of the sterilizing of the supply is a procedure which cannot be considered safe, and which may give rise to an outbreak of water-borne disease upon infection entering the supply from the numerous opportunities noted in the above report.
5. That opportunities for contamination of the new Cork Center supply exist, not alone due to the existence of two summer camps on the watershed and the highway crossings, but from the accidental, incidental or wilful pollution of hunters, fishermen or trespassers upon the watershed.

It was therefore recommended:

1. That the authorities in charge of the public water supply of Johnstown immediately resume sterilization of the water from the old Cork Center distributing reservoir, applying liquid chlorine at a rate to be determined in accordance with the results of daily tests for excess chlorine as outlined in the instructions issued by this Department, a copy of which is attached to this report.
2. That the authorities in charge of the public water supply take immediate steps to remedy the objectionable conditions existing in the reservoirs giving rise to the occurrence of the disagreeable tastes and odors in the public water supply, by removing the present growths mechanically and by treating with copper sulphate, in accordance with the procedure outlined in the body of this report, in order to prevent their recurrence.
3. That the authorities in charge of the public water supply continue their careful supervision of the supply, making frequent inspections of the watershed, in order to discover and eliminate any possible sources of pollution that may be found to exist.

KAATERSKILL

An inspection of the water supply of the Ulster and Delaware railroad, at Kaaterskill, N. Y., was made by Mr. W. J. Erickson, sanitary inspector in this Department, on June 10, 1921.

Kaaterskill station is located at the outlet of South lake, in the town of Hunter, in the southeastern part of Greene county. This section is a noted summer resort and many hotels and camps are located in the vicinity. Except for a saw mill there are no buildings in the vicinity of the station. The water supply, which is used only to fill the water tank on the coaches of the branch line of the railroad, is derived from a spring located about 1,000 feet east of the railroad and about 30 feet north of the track.

The spring water comes to the surface at the foot of North Mountain, in a circular well of flat stone slabs. The well is not protected from surface wash nor is it covered. The water is obtained by dipping a bucket into the well. The mountain side above the spring is uninhabited and is crossed by only one road which is about a half mile above the spring.

In a report on an inspection of the supply dated July 31, 1921 the following conclusions were made:

1. That the spring should yield a satisfactory water if properly protected from surface wash.
2. That the spring is not protected from surface wash and the method of drawing the water is unsatisfactory.

It was therefore recommended:

1. That the spring be protected from surface wash by extending th wells and covering it.

2. That a more satisfactory method other than dipping into the sprin be developed for obtaining the water.

KEESEVILLE

A reinspection of the public water supply of the village of Keesevill Essex county, N. Y., and of a number of proposed new sources of publi water supply was made by Mr. Alfred Mullikin of this Division on Novemb 3, 1921. Previous inspections of this supply have been made by th Division in 1915 and 1920 and the reports thereon published in the Annu Reports of the Department for those years.

Keeseville, a village with a present population estimated at 1,800 located in the northwestern part of Essex county, 5 miles west of La Champlain. Of the total population approximately 42 per cent are serv with water from the public water supply. The waterworks are owned an operated by the municipality under the direction of a board of water co missioners of which Mr. W. S. Greene is president. The water supply derived in part from the Ausable river and in part from a deep well, driv through rock in the south bank of the river near the center of the villag The water from the well is only used in case of emergency as the yield inadequate to meet the demands of the village and the supply is of unsatisfactory sanitary quality. From the Ausable river or the well, wat is delivered by pumping into the distributing system. The average dai water consumption based upon an average of 10 strokes per minute of t Lang pump amounts to approximately 468,000 gallons per day or over 6 gallons per capita.

Storage is provided by an equalizing rectangular reservoir located 1 miles southeast of the village at an elevation of some 280 feet. The reserv has not been used since 1917 as there has not been sufficient power fro the present pumps and waterwheels to pump the water to such an elevati The water from Ausable river flows by gravity through a wooden flume locat along the south bank of the river into the pumping plant. The locati of the pumping plant is about in the center of the village at the river ba The driven well, located under the pumping station, is only used during t months of July, August and September. The well is located in the cen of the thickly settled community. This well was driven to a depth of 50 feet but after repairs, was found to be 420 feet deep. When the pump in operation it draws water from all other wells in the locality and it claimed by the superintendent that it can be pumped dry in 48 hours.

The watershed of Ausable river above Keeseville is approximately 476 squ miles. There are a number of villages and hamlets located in the ri valley which consists of precipitous slopes of the Adirondack Mountai The principal villages and their populations consist of Clintonville, 2 Ausable Forks, 2,000; Jay, 200; Upper Jay, 525; Keene, 200; Keene Vall 400; Wilmington, 100; Lake Placid, 2,099 and Newman, 200; giving a to population of approximately 6,000. Some of the above named villages se directly into the river. The village of Lake Placid has settling tanks filter beds, the effluent from which finally reaches the river. At Aus Forks the sulphite wastes from the paper pulp mill enter the stream. F the recent inspection it appears that conditions remain practically described in the previous report and that our recommendations have been acted upon. Since it is generally known by the village authori that both sources of supply are polluted, the authorities have had u consideration the acquisition of a new source of water supply from any of the following sources: One proposed source of supply known as S springs located some ¾ of a mile southwest of the village on the north of the Ausable river, consists of an undeveloped area giving evidence of existence of some 6 or 8 springs which, at the time of the inspection, delivering a total amount of water of about 100 gallons per minute which is insufficient to supply the village. These springs are located on pasture land and are subject to considerable pollution. Another proposed source of supply consists of Bushea springs located some ¾ of a mile south of the village on the south side of Ausable river and consists of one small spring of good sanitary surroundings which, in itself, is insufficient to supply the village. A third source consists of a supply from Augur lake which is located about 3 miles south of the village. This lake also receives water from Butternut pond and has a drainage area including that of the pond of 13½ square miles. The watershed is sparsely populated but is subject to pollution from eight or ten houses and from pasture land. All of the three sources mentioned above would necessitate pumping the water into the village distributing system. A fourth proposed source is Butternut pond, located about 5 miles south of the village. This pond has a drainage area of 7½ square miles and is subject to pollution similar to that of Augur lake, with the exception that there are not over ½ dozen houses on the watershed. It has been the desire of the village officials to obtain a supply which shall be both adequate in quantity and of a satisfactory sanitary quality and which will not necessitate pumping.

In a report on an inspection of the supply dated November 21, 1921 the following conclusions were made:

1. That the present sources of public water supply as obtained from the Ausable river and the deep well are subject to serious and dangerous contamination and are of a very unsatisfactory sanitary quality and unsafe for human consumption.
2. That the present pumping machinery is inadequate or else serious leaks exist in the distributing system as it is impossible to pump water into the reservoir.
3. That the authorities in charge of the water supplies have not carried out the previous recommendations of this Department.
4. That the proposed source of water supply known as the Smith springs is probably inadequate in its present undeveloped state and was of an unsatisfactory sanitary quality at the time of the inspection.
5. That the proposed source of water supply known as the Bushea springs while of a fairly satisfactory sanitary quality, is in all probability too small to be considered as a satisfactory source of supply.
6. That the proposed source of water supply known as Augur lake while adequate in quantity is of questioned quality being subject to pollution, and would require some form of purification and pumping.
7. That the proposed source of water supply known as Butternut pond, while both adequate in quantity and so located as to probably eliminate the necessity of pumping, is at a considerable distance from the village and is of questionable quality being subject to some pollution which would necessitate sterilization with liquid chlorine.

It was therefore recommended:

1. That the village authorities in charge of the public water supply take immediate steps to carry out the previous recommendations of this Department concerning the acquisition of a public water supply that shall be both adequate in quantity and of a safe sanitary quality at all times.
2. That in view of the complicated hydraulic questions involved, the village authorities should retain the services of a competent sanitary engineer to advise them regarding the various available sources of supply and outline the best and most economical means of development.
3. That, as previously recommended, pending the installation of a new supply of satisfactory sanitary quality the village should immediately install a chlorination apparatus for the sterlization of their present supply with liquid chlorine.
4. That before any new source of supply is developed the village authorities should receive the approval of the State Water Power Commission in accordance with the provisions of Section 499 of the Laws of 1921.

LAKE GEORGE

A reinspection of the public water supply of the village of Lake George, was made by Mr. Earl Devendorf, a representative of this Division on June 1, 1921. Previous inspections have been made in the years of 1908 and 1919 and the reports thereon published in the Annual Report of the Department for the respective years.

Lake George is an incorporated village located in the southeastern part of Warren county at the southern end of Lake George. The village has a resident population estimated at 1,200 which is greatly increased during the summer months, as the village is a very popular summer resort. The entire population is supplied with the public water supply which is furnished by the Lake George Water Company of which Mr. E. J. Worden and Mr. S. M. Bates are owners. The water supply is derived from impounded reservoirs located on three small surface water streams west of the village. From the reservoirs the water is delivered by gravity through a distributing system.

In addition to the above regular source of water supply an auxiliary water supply is taken from Warrensburg brook which is used only in times of drought to supplement the supply from the other streams. At the time of the inspection it was stated that it had not been necessary to use the Warrensburg creek, the auxiliary source of supply. The watershed area tributary to the reservoirs used and the main source of supply amounts to some 5¾ square miles which is wholly timbered, and apparently free from any permanent source of pollution. From the recent inspection it appears that the waterworks officials have endeavored to maintain the regular supply in a satisfactory, sanitary quality; that the use of Warrensburg creek has not been necessary, and for that reason the sterilization plant has not been installed.

In a report on an inspection of the supply dated October 5, 1921, the following conclusions were made:

> 1. That while the regular public water supply of the village of Lake George is derived from sources which are apparently free from opportunities for pollution and should prove satisfactory from a sanitary quality although at times affected to some extent by surface run-offs at times of rainfall, the emergency supply derived from Warrensburg brook is subject to pollution from the population existing on the watershed and from the surface wash of the state highway and as previously pointed out, cannot be considered as a source of public water supply without adequate purification.
>
> 2. That the water Company has endeavored to maintain careful supervision over the main source of supply and have not resorted to the use of Warrensburg brook. It was therefore recommended that the Water Company continue careful supervision of the regular supply in order to prevent any contamination and that the emergency supply derived from Warrensburg brook be not used unless it is first sterilized by means of liquid chlorine or hypochlorite of lime as pointed out in the previous report.

LAKE PLACID

A reinspection of the public water supply of the village of Lake Placid, was made by Mr. Earl Devendorf, a representative of this Division on July 29, 1921. Previous investigations of this supply have been made by this Division in 1911, 1914 and 1919 and reports thereon printed in the Annual Reports of the State Department of Health for the years 1911, 1914 and 1920 respectively.

Lake Placid is an incorporated village in Essex county located on the shores of Mirror lake, a small lake emptying into the west branch of the Ausable river. The resident population is about 1,800, while the summer visitors increase it to about 6,000, all of which are served with the public water supply. The public water supply is owned by the village and operated under a board of trustees. The water supply is derived by pumping from Lake Placid. The chlorination plant for the treatment of the supply was installed in 1918. Besides serving all of the village, the supply is served to the camps of the Whiteface Inn district, Buck island and Ruisseaumont district. Lake Placid has a water surface of some 3.2 square miles and a total drainage area of 20.7 square miles. There are some 75 summer cottages and camps along the shore of the lake. The Shore Owners Association have cooperated with the village authorities to prevent the pollution of the supply by providing disposal systems and in some cases by pumping sewage a considerable distance from the lake. However, as the lake is used considerably for bathing, boating and fishing during the summer months there are possibilities of pollution from these sources. The recent inspection was made as a result of the desire of the village authorities to improve the sanitary conditions existing on the watershed tributary to the lake and at the request of the authorities this Department has prepared and submitted tentative rules and regulations for the sanitary protection of the public water supply of Lake Placid in accordance with the provisions of the Public Health Law. As soon as these rules have been approved and returned by the village authorities they will be enacted by the Department. At the time of the inspection it was found that the conditions surrounding the supply were approximately the same as described in the previous reports. The chlorination plant however, was not in operation and it had not been operated for some time, on account of complaints from the consumers regarding the objectionable tastes and odors alleged to occur in the water and attributed to the application of chlorine. The need for the continuous application of chlorine to the supply during the summer months was again pointed out to the village officials and the apparatus was placed in operation. The attendant was instructed in its use and how to make tests for excess chlorine in the treated water in accordance with the so-called starch iodide test.

In a report on an inspection of the supply dated December 31, 1921 the following conclusions were made:

1. That while the public water supply of Lake Placid is comparatively free from the possibility of contamination during the winter, it is subject to opportunities for contamination during the summer months from the large summer population.

2. That the village authorities have received for their approval a copy of the rules and regulations prepared by this Department for the sanitary protection of the public water supply of Lake Placid.

3. That the chlorination plant was not in operation at the time of the recent inspection.

It was therefore recommended:

1. That the village authorities continue their careful supervision and sanitary patrol of the watershed in order to discover and eliminate any sources of pollution and as a means of assisting in this supervision the authorities should return with their approval the rules and regulations prepared by this Department for the sanitary protection of the public water supply of Lake Placid.

2. That the authorities in charge of the public water supply maintain careful supervision of the operation of the chlorination apparatus in order that a water of safe sanitary quality may be assured the residents at all times.

LARCHMONT

A reinspection of the public water supply of the village of Larchmont was made by Mr. Earl Devendorf, a representative of this Division, on July 18, 1921. Previous investigations of the supply have been made by this Department in 1911, 1912, 1915, 1916 and 1917 and the reports thereon published in the Annual Reports of the Department for those years.

Larchmont is an incorporated village located in the southeastern portion of Westchester county, about 19 miles from New York city. The resident population amounts to some 2,400 inhabitants. During the summer time, however, the population is said to be increased by the influx of summer visitors to some 6,000 or 7,000. Practically the entire population is served by the public water supply. The waterworks are owned and operated by the Larchmont Water Company of which Mr. William Murray is president and superintendent. The water supply is derived from the Sheldrake river at a point about 2½ miles northwest of the village. The water is impounded by three storage reservoirs, from the lower one of which the water flows by gravity through pressure mechanical filters. The effluent from the filters is sterilized by means of liquid chlorine before it is delivered to the village. The average daily consumption varies from a minimum of 225,000 gallons per day during the winter to a maximum of some 400,000 gallons per day during the summer. Since the last previous inspection a new Wallace and Tiernan automatic control chlorination apparatus has been installed to replace the old electric-bleach apparatus which had become disintegrated. The chlorine is applied to the effluent from the filters by means of a Ross water injector pump.

The watershed tributary to the supply is approximately 2½ square miles in area. While the watershed is not densely populated there are numerous opportunities for contamination of the supply from residences on the watershed in the vicinity of the river. This area is however being rapidly built-up, especially in certain districts and unless adequate precautions are taken to prevent the improper location of cesspools and sewers the supply will be grossly contaminated from these sources. At the time of the inspection a Boy Scouts' camp was observed at the upper end of Carpenters pond. At this camp a latrine was maintained within 25 feet of the river. The land on which the camp was situated is owned by the water company and the camp authorities have been advised by the company that they could not continue to camp here in the future. At the time of the inspection no algae were observed in the reservöir but copper sulphate had been applied, during the past year. The superintendent stated that the organisms usually found in the reservoir were asteronella, synedra and other diatoms. He stated, however, that the use of copper sulphate had been successful in eliminating the growths and had been applied in accordance with the recommendations of the Pease Laboratories. Through the by-pass raw water can be delivered directly to the village at times when the filters are out of commission.

It was therefore recommended in a report dated August 30, 1921:

1. That the authorities in charge of the village water supply carry out at once such of our previous recommendations as have not as yet been acted upon and which are given in the body of this report.
2. That the authorities in charge of the public water supply provide a duplicate chlorination plant or sufficient duplicate parts of the chlorination apparatus to insure the constant and continuous sterilization of the public water supply.
3. That the present unsuitable filter media be replaced with suitable media preferably having an effective size ranging from 0.3 to 0.4 mm and a uniformity coefficient not greater than 3.0.
4. That the company consider a rearrangement of the present filters so as to apply alum in a constant uniform manner by means of a dry feed apparatus.
5. That the Company endeavor to operate the purification plant in such a manner as to produce a water of good sanitary quality at all times.

LAURENS

A reinspection of the public water supply of the village of Laurens, Otsego county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on February 28, 1921. A previous inspection of the supply was made by this Division in the year 1914 and a report thereon published on page 369 of the Annual Report of the Department for that year.

Laurens is located 8 miles north of the city of Oneonta. The present population is 365, of whom practically all are served by the public water supply. A few families outside of the incorporated village limits are also served from this supply. The waterworks are owned by the village and are under the control of the board of trustees, of which Mr. S. C. Millard is president. The water is derived from two groups of springs, one group located near a hill a mile southeast and the other on the hillside three-quarters of a mile southeast of the village. There is a distributing reservoir of masonry construction located half a mile southeast of the village. The water is distributed by gravity through the distributing system. The four springs near the hill and the three springs on the hillside have been developed by the construction of circular concrete basins. About 200 feet east of the reservoir on the hillside another spring has been developed by a shallow square excavation. The upper end of the basin is flush with the surface of the ground and easily permits the entrance of surface wash. At the time of the inspection the heavy snows were beginning to melt and it was observed that considerable surface water made its way into the basin through the natural shale rock which formed the walls of the basin.

In a report on an inspection of the supply dated March 17, 1921, the following recommendations were made:

1. That the authorities in charge of the public water supply provide concrete walls, extending these about a foot above the surface of the ground, for those springs that are not as yet protected from surface wash and also enclose with a suitable woven wire fence those springs that are not protected from chance or wilful contamination.
2. That drainage ditches be dug above all the springs to divert the surface wash.

LE ROY

An investigation of the sanitary quality of the public water supply of the village of Le Roy was made by Mr. Henry Ryon, assistant engineer in this Department, on January 5, 1921. A previous inspection of this supply was made on August 21, 1917, and a report thereon will be found on page 381, Volume II, of the 38th Annual Report of this Department.

Le Roy is an incorporated village of 4,700 inhabitants, located in the western part of Genesee county, about 25 miles southwest of Rochester. The water supply is owned by the village and operated by the board of water and light commissioners, for whom Mr. E. G. Middleton is superintendent. There is no comprehensive sewer system in the village. There are, however, a few sewers and drains, most of which have been built by private parties, which serve the built-up portion of the municipality and discharge their sewage into Oatka creek, a small stream which flows through the village. The remainder of the village is served by leaching cesspools. The public water supply is derived from the upper part of Mud creek, the water being collected in an impounding reservoir of 175,000,000 gallons capacity, at a point about 6 miles south of the village, whence, after treatment in a rapid sand filter plant, located just below the dam forming the reservoir, it flows through a 16-inch main to the village distribution system, the surplus going to a standpipe and an elevated tank. The elevation of the top of the standpipe is several feet below the water level in the clear water basin at the filter plant, and for that reason some difficulty is being experienced, due to the standpipe overflowing. It is understood, however, that it is intended in the near future to raise the tank and thus avoid the trouble from this source. About 85 per cent of the population is served with water from the public supply. The consumption is estimated at about 210,000 gallons per day, or 65 gallons per capita per day, but, since there are no means of measuring the flow of water, this estimate is probably not very accurate.

The area of the watershed from which the supply is derived is approximately 1.7 square miles. The total population of this area is between 25 and 30 persons, or about 17 persons per square mile. In general, the watershed consists of gently sloping land, used principally for farming. The village owns considerable land in the immediate vicinity of the reservoir. The buildings on the watershed are in general located well back from the stream, and there appears to be little opportunity for direct contamination of the water.

The treatment plant, which, as stated above, is located immediately below the dam, consists of an aerator, a coagulation basin, two open gravity sand filters and a clear water basin. The water passes first from the reservoir to the aerator, which is housed in a small ell at the northwest corner of the building provided with louvers for ventilation. From the aerator heads it falls into a small shallow basin, from which it passes downward through a vertical Venturi tube into the coagulation basin, a concrete chamber of about 40,000 gallons capacity, an equivalent of approximately 4 hours' detention, located under the floor of the filter house. A float in this basin connects to a valve in the inlet to the aerator, and maintains a constant level in the basin by regulating the flow to the aerator. Alum is applied to the water as it passes through the Venturi from the aerating chamber to the coagulation basin by an automatic valve actuated by the Venturi. It was stated that from 50 to 60 pounds of alum are used per day.

In a report upon the supply dated January 31, 1921, the following conclusions were made:

> 1. That the water supply of the village of Le Roy was not in a satisfactory condition at the time of the inspection.
> 2. That the filter plant was not being operated in such a manner as to effectively purify the water.
> 3. That no means are provided at the filter plant for measuring the quantity of water and thus regulating the rate of application of the coagulant.

It was, therefore, recommended:

> 1. That the quantity of alum applied to the raw water be regulated in accordance with the condition of the raw water, and that sufficient alum be applied at all times to cause the formation of a suitable flock and obtain effective results from the process of filtration.
> 2. That means be provided for accurately measuring the quantity of water treated.
> 3. That a careful record be kept of the amount of water treated and the quantity of alum applied to the water.
> 4. That several hours be allowed to elapse between the washing of one bed and the washing of the other.
> 5. That the first filtrate after washing be wasted for at least 15 minutes by means of rewash valves provided for that purpose.
> 6. That if, after carrying out the above recommendations, it is found that the plant does not yield a water of unquestioned purity at all times, a chlorinating apparatus be installed and put in operation.

LILLY DALE

A reinspection of the public water supply of the unincorporated village of Lilly Dale, Chautauqua county, N. Y., was made by Mr. Alfred Mullikin of this Division on August 29, 1921. A previous inspection of this supply was made by this Division in 1915, and a report thereon published in the Annual Report of the Department for that year.

Lilly Dale is a religious settlement with a present population estimated at 200 in winter and 400 in the summer. It is located on the east shore of Cassadaga lake, about 9 miles south of the city of Dunkirk. Of the total population all are served with water from the public water supply. The waterworks are owned and operated by the Lilly Dale Assembly under the direction of a board of trustees. The water supply is derived from two sources, one being taken from Upper Cassadaga lake and the other from about five driven wells located in various sections of the village. From the lake the water is delivered by pumping into a distribution system. The average daily water consumption is approximately 21,000 gallons, or 50 gallons per capita. Storage is provided by 2 standpipes.

There are three lakes in the chain of lakes known as the Cassadaga lakes. The water enters Upper lake from the east and flows very slowly through a channel to Middle lake and thence to Lower lake. The watershed tributary to Upper lake, the source of water supply, has an area of about 4 square miles. With the exception of the thickly populated area on the east side of the lake, there are very few houses on the watershed. The houses on the east side, however, are provided with a sewer system, the sewage from which is treated in a settling tank and discharged into Middle lake. At the time of the inspection the water of Middle lake was very turbid, and appeared to be receiving considerable pollution from the sewage disposal plant. Upper lake is also subject to pollution by people using the lake for bathing and boating. It is claimed that the water is not used for drinking purposes on account of possible contamination of the supply from the sewage disposal plant, but is maintained for fire protection, washing and sprinkling purposes.

There are 5 public wells, used as a source of drinking water supply, located at the following places: Melrose park, Forest temple, The Village Cafeteria, The Maplewood hotel and Leolyln hotel. These are apparently driven wells and are located in thickly settled parts of the community. They are not adequately protected from surface wash, and there are sewers generally within a relatively short distance of them. Three of the wells are housed in small wooden sheds. Each well is provided with a hand pump. From the recent inspection it appears that the recommendations of this Department have been only partially carried out. A sewerage system has been installed and a settling tank provided for the treatment of the sewage. The water supply pumped from Upper lake, however, is not sterilized, the public wells have not been abandoned, nor has an application been made for rules and regulations for the protection of the watershed.

It was therefore recommended in a report dated October 11, 1921:

1. That the authorities in charge of the public water supplies immediately carry out the previous recommendations of this Department, namely, that a suitable apparatus be installed for the sterilizing of the Upper lake water supply with liquid chlorine; that application be made to this Department for the enactment of rules and regulations for the protection of the supply.
2. That the wells at the Maplewood Hotel and Forest Temple be abandoned immediately.
3. That the other wells be abandoned when the main water supply has been improved and rendered satisfactory from a sanitary standpoint.
4. That additional treatment of the sewage from the village sewer system be provided in order to lessen the possibility of contamination of Upper lake supply.

LIMA

A reinspection of the public water supply of the village of Lima, Livingston county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on March 22, 1921. A previous inspection of the supply was made by this Division in the year of 1916, and a report thereon published in the Annual Report of the Department for that year.

Lima is located 20 miles south of the city of Rochester. The present population is estimated at 1,000. Of the total population 90 per cent are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of trustees, of which Mr. H. Allen Sylvester is president. The water supply is derived from a shallow well located 1¼ miles west of the village. From the well the water is delivered by pumping into a storage reservoir located on a hill about 600 feet west of the pumping station. From the reservoir the water flows through the village distributing system. The average daily water consumption is approximately 60,000 gallons, or 66 gallons per capita. Since the last previous inspection a new 24-horsepower gasoline engine and Rumsey triplex pump have been added to the plant.

The well is situated at the foot of the hill on which the reservoir is located. There were apparently no direct sources of pollution in the vicinity of the well at the time of the inspection. The barn near the well, which formerly constituted a possible source of pollution, is no longer in use. The nearest barn in use is at a distance of more than 500 feet from the plant. The village now controls an area of 10 acres in the vicinity of the pumping plant.

In a report on an inspection of the supply dated April 27, 1921, the following conclusions were made:

1. That the water supply at the time of the inspection was very hard but of a satisfactory sanitary quality.

It was therefore recommended:

1. That the authorities in charge of the water supply carry out our previous recommendation, that a fence be constructed enclosing the area near the well to prevent trespassing and to keep animals away from the well.
2. That the authorities continue to maintain a careful supervision at all times over the water supply.

LYONS

A reinspection of the public water supply of the village of Lyons, was made by Mr. W. J. Erickson, sanitary inspector, on April 11, 1921. Previous inspections were made in 1908, 1910, 1916 and 1919, the reports upon which are found published in the Annual Reports of the Department for the respective years.

Lyons, which is a village of about 5,000 inhabitants, is located in the southern part of Wayne county about 50 miles west of Syracuse. The village is provided with a comprehensive sewer system which empties into the Barge canal after passing through a disposal plant consisting of Imhoff tanks and sprinkling filters. About half of the population of the village is served by the public water supply, owned and operated by the village under the supervision of the municipal board of which Mr. H. F. Zimmerlin is superintendent. The supply is derived from five small lakes or ponds located about 8½ miles south of the village. From the intake which is located at the outlet of the lowest lake the water flows by gravity through a gravity mechanical filter. After sterilization with liquid chlorine the water is pumped from the clear water basin through the distribution system to a steel standpipe. A second standpipe is kept full for use in case of emergency. The average consumption in the village is about 200,000 gallons a day with a maximum of 350,000 gallons. In general the water system remains as described in the report on the inspection of 1916.

The area tributary to the ponds from which the supply is derived, is about ¾ of a square mile. The ponds are largely spring fed. There are but two houses on the watershed which are located at some distance from the ponds. However, the area is devoted to agriculture and is accessible to fishermen, bathers and other trespassers. Rules and regulations for the protection of the supply were enacted by this Department in 1916. Considerable trouble is experienced by the excessive growths of algæ, particularly in the lowest pond and shallow channel formed by the dam at the intake.

Several improvements have been made at the filtration plant since the previous inspection. The loss of head gauges have been repaired. Scales have been provided for checking the amount of chlorine used, curbing has been provided from the manholes to the clear water basin and the amounts of alum and liquid chlorine applied have been increased. The plant was not in operation at the time of the inspection though the operator cleaned one of the beds for demonstration of the procedure followed.

At the time of the 1919 inspection it was pointed out that while the public water supply of Lyons was of good quality from a sanitary standpoint it was seriously affected as to its æsthetic quality by the occurrence of algæ growths at certain seasons of the year; that the method of controlling these growths had not been satisfactory, and that the purification plant was not operated in an entirely satisfactory manner. It was accordingly recommended that the purification plant be operated at all times, that some necessary repairs be made, that copper sulphate be judiciously and regularly applied to prevent algæ growths and that consideration be given to the aeration of the supply as a means of removing the tastes and odors produced as a result of the decomposition of the organic matter in the reservoirs.

In a report upon the supply dated April 27, 1921, the following recommendations were made:

1. That greater care be taken in the operation of the purification plant particularly in the cleaning of the beds and the application of the alum.
2. That tests for color, turbidity and alkalinity be made by the operator at frequent intervals in order to keep a check on the operation of the plant.
3. That the chlorination apparatus be operated efficiently at all times.
4. That all unauthorized visitors be excluded from the premises.
5. That the rules and regulations for the protection of the supply be rigidly enforced.
6. That in order to keep down the growth of algæ in the reservoirs, vegetable growths be removed so far as possible and copper sulphate be applied in proper amounts at suitable intervals.
7. That consideration be given to the aeration of the water as a means of removing some of the tastes and odors produced as a result of the decomposition of the algæ growths in the reservoirs.

A reinspection of Lyons Public Water Supply, was made by Mr. Earl Devendorf on September 16, 1921.

The village authorities have applied copper sulphate frequently to the reservoirs, thereby preventing any large growths of algae. Some 35 pounds of powdered copper sulphate was applied broadcast over the lower reservoir on April 15, May 24, June 18, July 13, August 4, and September 3. Alum is used at the filter plant at the rate of approximately ½ grain per gallon and chlorine is applied at the rate of approximately .24 parts per million. In this connection, it was pointed out that it is advisable for the operator to make frequent tests for excess chlorine in the treated water by means of the starch determinations, in order that a sufficient amount of chlorine may be at all times applied to the water to insure the sterilization of the supply.

It was learned that the well at the New York Central car works formerly used for supplying water for drinking and culinary purposes in interstate traffic, has been discontinued for such use and is only used by the men at the shops. The water used for supplying the cars is now obtained from the village public water supply.

It was therefore recommended in a report dated December 31, 1921:

> 1. That the authorities in charge of the water supply continue their careful supervision and laboratory control of the operation of the purification plant in order to insure a water of safe sanitary quality being delivered to the consumers at all times.
>
> 2. That the authorities in charge of the water supply continue the frequent application of copper sulphate to the reservoirs in order to prevent the occurrence of algæ growths and the consequent objectionable tastes and odors in the public supply, and as previously recommended, consideration should be given to the aeration of the supply as a means of removing some of the tastes and odors resulting from the decomposition of the algæ growths in the reservoir.

MACEDON

At the request of the health officer of the village of Macedon, Mr. Earl Devendorf of this Department made an investigation of a proposed source of water supply for the village. It is proposed to dig a well, erect an electrically operated pumping station, lay mains and build a reservoir on a hill north of the village proper.

The site of the proposed well is in a pasture lot on a farm, the nearest farm buildings being some 500 feet distant. The well had been dug to a depth of some 7 feet and was about 7 or 8 feet in diameter. A small stream and pond were located about 75 feet from the well. Owing to the fact that the soil consists of sand and very coarse gravel which, under certain conditions, might allow infiltration from the stream, it was recommended that the well be located at a farther distance from the stream if possible. It was also pointed out that the well should be provided with a concrete curb and cover and that the area around the well should be fenced and that the pumping station be located away from the well so as to preclude the possibility of any pollution from this source. It was also pointed out that the reservoir should be covered to prevent the growth of algæ.

MADISON

A reinspection of the public water supply of the village of Madison, Madison county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department on December 7, 1920. A previous inspection of the supply was made by this Department in 1914 and a report thereon published in the Annual Report of the Department for that year.

Madison is located about 20 miles southwest of Utica and has a population of about 375, all of whom are served by the public water supply. The waterworks are owned and operated by the village and are under the control of a water board of which Mr. A. C. Bicknell is president.

The water supply is derived from springs located about 3/8 of a mile north of the village and is pumped directly into the distributing system, the surplus over the consumption going to a steel standpipe. The village has no sewerage system, the houses in general being served by cesspools.

A report on the prevous inspection recommended that adequate drainage ditches should be constructed to prevent surface wash from reaching the springs and that the standpipe should be covered in order to prevent algæ growths. From the recent investigation it appears that steps have been taken to prevent the entrance of surface wash to the springs but that the standpipe has not been covered.

In a report dated January 24, 1921 it was pointed out that the water supply was at the time of the inspection of a fairly satisfactory sanitary quality.

It was therefore recommended that the authorities in charge of the water supply continue to maintain the supply in a safe, sanitary condition.

MEDINA

A reinspection of the public water supply of the village of Medina, with special reference to the installation of a temporary hypochlorite sterilization plant, was made by Mr. Earl Devendorf, a representative of this Department, on September 1, 2 and 15, 1921. Previous inspections of this supply have been made in 1916 and 1920, and reports thereon will be found in the Annual Reports of the Department for these years respectively.

Medina is an incorporated village of some 6,500 inhabitants, located in the western part of Orleans county, about half way between the cities of Buffalo and Rochester. The village is served by a municipal sewer system which discharges without purification into Oak Orchard creek, a small stream flowing through the village and discharging through to Lake Ontario. The waterworks are owned by the village and operated under a board of trustees, of which Mr. H. Pettis is president and Mr. James Boyland is superintendent. The supply is obtained from a dug well located about 3 miles south of the village, from which it is pumped to a concrete reservoir. From the reservoir it flows by gravity to the village distribution system and a standpipe located in the village. Approximately 95 per cent of the population is served with the supply, and the maximum consumption is about 2,000,000 gallons per day, or 305 gallons per capita per day, of which it is estimated that 190 gallons are used for domestic purposes and 115 gallons for industrial use. In general the details of the waterworks system remain as described in the previous report.

The recent inspection was made as a result of a telegram received from Dr. George F. Rogan, health officer of Medina, informing this Department that the supply was running low, due to the long continued drought, and that the village would be obliged to pump canal water into the mains, and requested this Department to install a chlorination plant to treat the same. The Department communicated with Dr. Rogan by telephone on September 1 and obtained data as to the pumping equipment and other local conditions. He was advised that the emergency chlorination apparatus of the Department had just been installed at another place, but was requested, however, to have the village authorities refrain from pumping water from the canal, if possible, until a representative of this Department could reach Medina that afternoon to install the temporary hypochlorite sterilization plant.

Upon the arrival of our representative it was found that it had been necessary for the village to pump water from the canal, due to the extreme shortage of water and accompanying low pressure in the village. Pumping was started at 11 p. m. on August 31 and continued until 5:30 a. m. on September 2, 1921. With the aid of Mr. Boyland and his assistants, our representative installed a temporary hypochlorite plant over the suction well of the fire pump at the S. A. Cook furniture factory, which was being used to deliver the mixed canal and Oak Orchard creek water into the village distribution system. A solution of hypochlorite of lime was prepared in a 50-gallon barrel and the hypochlorite solution conveyed to the suction well near the intake pipe through a hose regulated by means of a control valve placed on the outlet pipe from the barrel. The application of the hypochlorite solution was regulated in accordance with the results of the starch iodide test for excess chlorine, directions for which were left with the operator. The emergency sterilization plant was started in operation at 9 p. m. in the evening. The pump used for delivering the water into the village distribution system consists of a steam pump having a rated capacity of 1,000 gallons per minute, and at the time of the inspection it was delivering approximately 800 gallons of water per minute.

During the evening our representative attended a meeting of the board of trustees and urged the village authorities to order immediately a liquid chlorine control apparatus for applying liquid chlorine to the water, inasmuch as such apparatus would be much more satisfactory than a crude hypochlorite plant such as that installed for emergency use. The village authorities were informed that the apparatus at the end of the period of pumping could be taken down and packed away for future need, when it would be immediately available. The board, acting upon the suggestion, ordered by telegram a Wallace and Tiernan manual control chlorinator. The apparatus was installed and placed in operation on September 4 by a representative of the Wallace and Tiernan Company.

In our previous reports it has been recommended that the village authorities engage the services of a competent water supply expert to aid them in augmenting the present public water supply, and that in case it becomes necessary to again pump water from Oak Orchard creek and the Barge canal overflow, before the supply is augmented by water from a satisfactory additional source, the water be first effectively chlorinated before it is pumped into the village mains, and that the present cross-connection between the fire pump at the furniture factory of the S. A. Cook Company and the village distributing mains be discontinued, or that double check valves be installed in an accessible manhole in accordance with the general plan approved by this Department.

From our recent inspection it appears that steps have been taken by the village to augment its supply as recommended, but the village authorities have not carried out the recommendations with reference to the cross-connection. Our representative was advised by the chief engineer of the S. A. Cook furniture factory that the connection between the village mains and the fire pump consisted of two gate valves between which an open standpipe was placed, and that the company considered this constituted a satisfactory safeguard against any possible entrance of polluted water into the village mains except at such times as required, due to the shortage of the village supply, when the supply would be chlorinated. In view of the fact, however, that the operation of the gate valves is dependent upon human control, there is always the inherent possibility of some one neglecting to perform the proper functions of operating these valves, and it would appear desirable to install the double check valves as previously pointed out, or to provide a severance of the two systems by removing a short section of the piping, which could be inserted in a few minutes at such times as might be necessary. It should, however, be given further study by the authorities in charge of the water supply, and the details of the piping system ascertained.

In a report upon the supply dated December 30, 1921, it was recommended:

1. That, in case it again becomes necessary to pump water from Oak Orchard creek and the Barge canal overflow to augment the regular well supply, the creek water should be sterilized by means of liquid chlorine applied in accordance with the results of the starch iodide test for excess chlorine, a copy of which is appended.
2. That the village authorities take steps as soon as possible to augment their present supply in accordance with the recommendations and suggestions of the engineer employed by the village to aid them in this problem.
3. That the village authorities ascertain the details of the cross-connection between the fire pump at the S. A. Cook furniture factory and the village distribution system, and give consideration to the separation of the two supplies by means of removal of a short section of the pipe line, which may be inserted in a few minutes at such times as it may be necessary to use this supply, or the installation of double check valves as previously recommended.

McKOWNVILLE

A reinspection of the public water supply of the village of McKownville was made by Mr. W. J. Erickson, sanitary inspector in this Department, on April 27, 1921. A previous investigation was made in 1919 and reported on under the name of Norwood on page 261 of the 40th Annual Report of the Department.

McKownville is an unincorporated village, with a population of about 250, located adjacent to the western boundary of the city of Albany on the western turnpike. It is a residential section and is not provided with a sewer system. The public water supply is owned and operated under the direction of Mr. W. H. Witbeck. It is derived from a small surface stream impounded in two small ponds on the north side of the state highway, a short distance west of the hamlet. From the lower pond the water is pumped by two hydraulic rams into a small concrete reservoir, from which it flows by gravity through mains.

The watershed above the point of intake has an area of about 1 square mile, with a total population of about 40. It is largely barren, rolling sandy area, with some pasturage and a small amount under cultivation. The streams are largely spring fed and flow in a fairly constant volume throughout the year. There are 8 houses, 1 church, 1 blacksmith shop and a cemetery on the watershed. Most of these places are located well back from the streams. There are, however, three places near the stream at which insanitary conditions exist. At one farm there is a privy not over 15 feet from the swampy area, where the springs feeding a tributary stream leave the ground. A small ditch has been dug from the rear of this privy to the swampy area, and a small slimy stream was flowing at the time of the inspection. About 300 feet above this was a pig pen containing about 6 pigs. The pen was about half full of stagnant water, which flowed a short distance in a ditch, whence it entered a tile drain which discharged into the swamp a short distance from the privy. A faint odor similar to that of sewage was noticeable in the vicinity. At the point where the small rivulets unite to form a small stream a duck pond has been formed by a small earthen dam. A short distance below and on the south bank of the same stream a privy is located on the bank about 75 feet from the stream. Near the head of another tributary stream is another farm. The privy at this farm is located on the bank 50 feet from the water's edge. This privy is provided with a tight container, which is drawn away and the contents buried in a field away from the stream. Chloride of lime is used as a disinfectant. The barnyard is about 150 feet distant from the stream, and cattle are allowed to drink from the stream. Beside the evident contamination from these sources, the supply is also subject to contamination from visitors, to whom the entire watershed is accessible. There are several well-worn paths in the wooded gullies which run close to the stream and cross it at several points. Ice is cut from this reservoir. From this inspection it appears that none of the previous recommendations made by the Department have been carried out.

In a report on an inspection of the supply dated May 11, 1921, the following recommendations were made:

1. That the owner of the supply make such arrangements with the owners of the property on the watershed of the reservoir as may be necessary, and remove all privies and other possible sources of contamination to a distance sufficiently remote from the stream and lines of drainage to prevent any danger of direct contamination.
2. That, should any difficulty be experienced in carrying out the above recommendation, application be made to this Department for the enactment of rules and regulations for the sanitary protection of the supply.
3. That the lower reservoir be fenced and trespassing thereon be prohibited.
4. That signs be posted on the watershed warning against contaminating the supply.
5. That the practice of ice cutting be permanently abandoned.

MOHAWK

An investigation of the public water supply of the village of Mohawk, Herkimer county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on May 13, 1921. Previous investigations of this supply were made in 1916 and 1918 and the reports thereon may be found in the Annual Reports of the State Department of Health for the years 1917 and 1918, respectively.

Mohawk is an incorporated village of some 2,700 inhabitants located in the southern part of Herkimer county on the Mohawk river opposite Herkimer. The village is served with a public sewer system, the sewage from which is discharged into the Mohawk river without treatment. The water supply is owned by the village and operated under a board of water commissioners, of which Mr. O. E. Day is president, Mr. F. D. DuBois is superintendent and Mr. George Rockerfeller is operator of the pumping station. The water supply is derived from a well located on the northeastern edge of the village between the West Shore railroad and the Erie canal. The water is pumped without treatment into the village distribution system and the excess over consumption goes to a standpipe located on a hill in the southeastern part of the village having a capacity of 70,000 gallons. The average daily consumption amounts to some 300,000 gallons or 112 gallons per capita per day.

The well from which the supply is derived is located approximately 200 feet north of the canal and about 75 feet from the West Shore railroad track. Originally the ground surrounding the well and pumping station was from 3 to 5 feet lower than the present ground surface, the surrounding area having been filled in to that depth. The soil below this filled material consists of some 3 or 4 feet of clay mixture forming an impervious layer, below which is a sand and gravel strata from which the supply is obtained. The well itself is 12 feet in diameter and 20 feet in depth. A steel casing is provided with an iron cover having a locked door. The water level in the well when the pump is not in operation is some 13 feet in depth or about 6 feet below the ground surface. When the pumps are in operation the water level is at a distance of approximately 12 feet below the ground level and is about 7 feet in depth in the well. It was stated that the water level will drop to this level within a period of approximately 30 minutes after the pumps are started. When the pumps are stopped the water will gradually rise up to the higher level within a period of about 1 hour. The berme bank of the canal is approximately 8 feet above the ground elevation at the well.

The recent inspection was made directly as the result of a communication from the health officer with reference to complaints of the village residents alleging the presence of tastes of gasoline and oil in the village water. At the time of the inspection the engineer was informed that these tastes and odors were detected by only a few residents on one or two streets in the village and that it lasted for only a short time. The question arose in the minds of the waterworks authorities in regard to the possibility of the pollution of their drinking water supply by wastes entering the well from the abandoned canal. The superintendent informed the engineer from this Department that during the winter time the section of the canal opposite the pumping station never freezes over, due to the continual spring flow at this point. It was thought that the oil or gasoline tastes and odors might be caused by the manufacturing wastes or other waste material discharged into the abandoned canal near the pumping station and at times of pumping that the water from the canal might be drawn into the ground water flow tributary to the well when the ground water level surrounding the well is known to be lowered. No definite information can be given in this matter, however, due to the fact that there are so many factors entering into the question which are at the present time unknown and the conditions at the time of the occurrence of these bad tastes and odors noted cannot be ascertained. While it is possible that such reversal of flow might occur in the ground water tributary to the well, it seems improbable. Inasmuch as the canal may possibly be abandoned in the future, it would seem advisable for the village to acquire at least that section of the canal opposite the well and pumping station when it might be filled in, thus eliminating any possibility of pollution of the ground water supply tributary to the well at this point. In the meantime the authorities in charge of the well should endeavor to carefully watch and give constant, careful supervision of the operating conditions of the well in order that any opportunities for pollution may be detected and eliminated.

The previous reports have pointed out that the water supply of Mohawk is derived from a source which should furnish a water of satisfactory sanitary quality if the wells are at all times adequately protected from pollution. It was, therefore, recommended that the authorities in charge of the supply should continue very careful supervision as in the past so that no insanitary conditions may occur to prevent the furnishing of a pure, wholesome supply.

In view of the above facts the following conclusions may be drawn:

1. That, as previously pointed out, the public water supply of the village of Mohawk is derived from a well which should furnish a public water supply of satisfactory sanitary quality so long as there are no in-insanitary conditions in existence near it; and was at the time of the inspection free from active contamination.

2. That the recent question of the pollution of the well supply from wastes being discharged into the canal water opposite the pumping station cannot be determined without some further knowledge of the conditions existing at the time of the occurrence of the tastes and odors.

In a report upon the supply dated June 21, 1921 it was recommended:

1. That the village authorities continue, as in the past, their careful supervision of the public water supply so that no insanitary conditions may arise in the vicinity of the well supply that will cause any possible pollution of the public water supply and that careful observation should be made of the ground water level in the vicinity of the well; together with the conditions of flow in the canal in order that any possibility of pollution from this source may be ascertained.

MONTGOMERY

An investigation of the public water supply of the village of Montgomery, was made by Mr. W. J. Erickson, sanitary inspector in this Department, on March 15, 1921. A previous inspection was made of this supply in 1916, the report upon which is found published on page 484 of the 37th Annual Report of this Department.

Montgomery, a village with a population of about 1,000, is located in the northern part of Orange county on the Wallkill river. There is no public sewer system in the village. Practically all of the population use the public water supply which is owned and operated by the village under the direction of a board of water commissioners of which Dr. E. Ross Elliott is president. The supply is obtained from a dug well located about ¾ of a mile east of the village center. From this well the water is pumped through a distribution system consisting of 4 miles of mains. The daily consumption averages 45,000 gallons. The supply from the dug well is occasionally augmented by pumping from two driven wells located north of the pumping station. In case of extraordinary draft on the supply such as during very severe fires, it is possible to pump direct from the Wallkill river. There has been no necessity for the use of this source during the past ten years, the wells being sufficient for the extra draft on the system caused by ordinary fires. When then used, warnings were issued, and the mains flushed out and the standpipe emptied and cleaned before the use of the well supply was resumed. The auxiliary wells are located about 100 feet from the dug well toward the state road. The supply is obtained by means of air lifts which raise the water to small concrete basins located over the wells from which it flows by gravity to the dug well. The wells are seldom used as the water derived from them has a disagreeable taste and odor. The well is located in a low area adjacent to a small brook. As the area tributary to this brook is sparsely settled it does not seem probable that the supply receives serious pollution from this source. The only house in the vicinity is 500 feet from it and on the opposite side of the state road. At the time of the inspection chickens were kept in the vicinity of the well and were allowed to roam freely around it. It seems therefore, that, particularly at times of heavy rains, surface wash enters the well carrying with it contamination from the chicken yard. The Wallkill river is badly polluted by municipalities along its banks above Montgomery. It seems probable that with the storage afforded by the standpipe, augmented by pumping from the well, any emergency can be taken care of without pumping from the Wallkill river.

In a report on an inspection of the supply dated April 4, 1921 the following conclusions were made:

1. That though the condition of the watershed is such that the wells should yield a satisfactory supply, it appears that some local pollution was entering the dug well and contaminating the water so that it cannot be considered to be of an entirely satisfactory sanitary quality.
2. That the surroundings of the pumping station are not in an entirely satisfactory condition particularly in regard to the keeping of chickens in the vicinity of the well.
3. That the use of the Wallkill river as an auxiliary source of supply is dangerous to the health of the community and the connection between the river and the village water system be severed and the source abandoned.

It was therefore recommended:

1. That the surrounding and interior of the pumping station and wells be maintained in a satisfactory sanitary condition.
2. That the water board make an investigation in order to determine the source of pollution and take immediate steps to eliminate it.
3. That the well casing of the dug well be banked with some impervious material so as to divert surface wash from its immediate vicinity.
4. That the cross-connection with the Wallkill river be permanently severed and that should there be any doubt as to the adequacy of the present supply a new auxiliary supply be developed.

MONTOUR FALLS

A reinspection of the public water supply of the village of Montour Falls, was made by Mr. W. J. Erickson, sanitary inspector, on April 12, 1921. Previous inspections were made of the supply in 1909 and 1917, the reports upon which are published in the Annual Reports of this Department for the respective years.

Montour Falls, which is a village of about 1,500 inhabitants, is located in Schuyler county on Catherine creek, the inlet to Seneca lake, 19 miles north of Elmira. No sewer system is provided although a few drains carry off surface water from the streets. About three-quarters of the population use the public water supply, which is owned by the village and operated under the direction of the board of trustees. The supply is derived from an impounding reservoir located in Johns brook at a point 2 miles northeast of the village. From this point the water is distributed by gravity through a distribution system consisting of about 6 miles of mains. A connection also exists whereby it is possible to augment the supply by gravity from Catlin Mill brook if occasion requires it. The supply is used principally for sprinkling and flushing purposes, the potable water being obtained from private wells. The public supply, however, is used by some for drinking and culinary purposes. The reservoir is formed by a concrete dam constructed across the narrow gorge of the creek.

The watershed tributary to the reservoir is about 3.68 square miles in area and has a total population of about 150. The area is very precipitous and largely wooded. The remainder is devoted to agriculture. About 30 farms are located on the watershed, all of which are located well away from the streams. Catlin Mill creek has a watershed of about 8½ square miles above the point of intake, with a population of about 625. The possibilities for contamination are considerably greater than in the case of the regular supply. The village of Odessa, with a population of about 350, is located about 3 miles upstream and undoubtedly to some extent pollutes the stream.

The private wells from which the water for domestic purposes is obtained are said to be largely of artesian character. The cesspools in the village are in general sunk into the first gravel stratum but do not penetrate the clay stratum. From the present inspection it appears that the previous recommendations have not been acted upon.

In a report on an inspection of the supply dated April 29, 1921 the following conclusions were made:

1. That the regular water supply of the village of Montour Falls is subject to contamination from the inhabitants and visitors on the watershed.
2. That the auxiliary supply is subject to a considerably greater amount of contamination from a populated watershed.
3. That though the majority of the private wells are thought to be furnishing a safe water, it is quite probable that pollution at times finds its way into these wells from the numerous cesspools and privies in the village.

It was therefore recommended:

1. That a modern purification plant be installed for treating the public water supply and put in operation without delay.
2. That pending the installation and operation of such a purification plant the water be sterilized continuously by the application of liquid chlorine.
3. That the auxiliary supply be abandoned and if it is necessary to obtain additional water, a new supply of safe sanitary quality be developed.
4. That the village authorities consider the matter of applying to this Department for the enactment of rules and regulations for the protection from contamination of the water supply.

MORAVIA

An investigation of the public water supply of Moravia, was made by Mr. Earl Devendorf, assistant engineer in this Department, on December 16, 1920. A previous investigation of this supply was made in 1916 and the report thereon published in the 1916 Annual Report of the State Department of Health.

Moravia is an incorporated village of some 1,400 inhabitants, located in the southern part of Cayuga county, about 13 miles southeast of the city of Auburn. The village is located on the Owasco lake inlet. There is no public sewer system in the village, the sewage being taken care of by means of private cesspools and privies. The water supply is owned by the municipality and operated under the board of trustees, of which Mr. J. P. O'Hara is president. The supply is derived from springs located about 4 miles southeast of the village. From these springs the water flows by gravity to the village distribution system, the excess over the consumption being discharged into a storage reservoir located between the springs and the village. An auxiliary supply is obtained from a well located east of the village, from which the water is pumped into the distribution system when the flow from the springs becomes insufficient. The conditions surrounding the well are practically the same as described in the previous report. Since the reservoir has been repaired it has not been necessary to use this source of supply. At such times as the well was in use it was said that the pump was being operated practically throughout the 24 hours and that the amount of water pumped amounted to 115,000 gallons per day.

In a report on an inspection of the supply dated January 24, 1921, the following conclusion was made:

That, as previously pointed out and as confirmed by the recent investigation, the public water supply of the village of Moravia is of a fairly satisfactory sanitary quality.

It was therefore recommended that the authorities in charge of the public water supply continue their careful supervision of the conditions surrounding the springs and well and take every precaution possible to prevent any opportunity for pollution of the public water supply.

MORRISVILLE

A reinspection of the public water supply of the incororated village of Morrisville, Madison county, N. Y., was made by Mr. Earl Devendorf, a representative of this Division on November 23, 1921. Previous inspections of this supply have been made by this Division in 1917, 1918 and 1920 and the reports thereon published in the Annual Reports of the Department for the respective years.

Morrisville is a village with a present population estimated at 600 and is located about 16 miles south of the city of Oneida. Practically all of the inhabitants of the village are served with the public water supply. The waterworks are owned by the municipality and operated under the direction of the board of trustees of which Mr. Frederick Southworth is president and Mr. Jesse Parker is superintendent. The water supply is derived from a reservoir located about ¾ of a mile west of the village. From the reservoir water flows by gravity through the distributing system. The average daily water consumption is estimated at approximately 30,000 gallons a day or some 50 gallons per capita per day. Storage is provided by the above mentioned reservoir, the capacity of which is not known but may be roughly estimated to hold three months' supply of water for the village, as based upon the present estimated rate of consumption. In general the details of the waterworks system remain as described in the previous report.

The recent inspection was made as a result of word reaching this Department that the regular supply had been depleted due to the long continued drought and that it was necessary to pump water from an auxiliary supply, known as Jones pond. The Department at the request of the health officer, Dr. Chase, detailed a representative to visit the village with the Department chlorination apparatus. Due to the fact that the Department car became disabled however, it was impossible to take the apparatus to the village.

At the time of the inspection our representative accompanied by Dr. Chase visited Jones pond, proposed as an auxiliary source of supply for the village, and found that the village authorities had erected a pump, which was not in operation due to a breakdown in the tractor used in operating the pump. The pump had been operated on two occasions previous to the time of the inspection, said to be on November 15 for a period extending from 3 to 5 p. m. and on November 17 for a period from 3 p. m. until 9 a m. on the following morning. The pond is supplied by a small stream having a watershed of approximately ½ square mile in area and is fed mainly by springs within a very short distance above the pond. The pond, however, is subject to sources of pollution from two privies serving two houses located on property adjacent to and above the pond. The privies themselves are located on a very steep bank at a distance of approximately

75 feet away from and some 25 or 30 feet above the water. No vaults are provided for receiving the excreta which are discharged directly on the surface of the steep slope. At the time of the inspection the entrails of a hog which had been butchered on the day before, were observed lying on the ground surface at a point within 10 feet of the water. A large iron pot used for scalding the hog was also located on the ground nearby and, while it was empty at the time of the inspection, evidence was observed which indicated that the scalding water had been discharged on the surface of the ground immediately above the water.

The above insanitary conditions were pointed out to Dr. Chase and to the other members of the Water Board later at a meeting at the store of Mr. Frederick Southworth, president of the board of trustees at which meeting there were also present Mr. Jerry C. Blair, Mr. Jesse Howlett, trustees; Mr. Solon Frank, street commissioner, and Mr. Jesse Parker, superintendent. They were advised that the Department could not approve of the use of water from this pond without satisfactory treatment or effective sterilization by means of liquid chlorine. They were also advised to immediately notify Mr. Russell Suter, senior assistant engineer of the waterpower commission that the village intended to use the Mill pond supply as an auxiliary to their regular water supply. They were further advised that upon the approval of the waterpower commission it would be advisable for the village to request the enactment of rules and regulations by this Department for the sanitary protection of the supply and that the present insanitary conditions noted above could be remedied by carefully patrolling the land surrounding the pond in order to prevent the reoccurrence of butchering on the area near the pond and by providing watertight concrete vaults under the privies which should then be cleaned frequently and the contents removed and disposed of at a point remote from the watershed and not likely to cause any possible pollution of the supply. The use of hypochlorite of lime in connection with the operation of the pump for sterilizing the supply was taken up with the village authorities.

The Department was later informed that due to subsequent rains the reservoir had filled and it had not been necessary to resort to the use of the Jones pond supply. Should it be necessary however, to again use this supply, precaution should be taken to improve the sanitary conditions on the watershed and to provide for the sterilization of the supply before being delivered to the consumers.

The watershed tributary to the main supply consists of about 60 acres, consisting of uninhabited agricultural ground. No direct sources of pollution were found to exist on the watershed but opportunities for indirect pollution of the supply by surface wash from the highway north of the reservoir may at times reach the supply through the lack of proper maintenance of the ditch provided for diverting this surface wash. At the time of the inspection this ditch was partly filled with dead weeds and limbs. This material should be cut and removed and the ditch maintained in a clean condition in order that no surface wash may back up and overflow the land leading to the reservoir. In our previous reports it has been recommended that the village authorities continue a careful supervision of the sanitary conditions of the reservoir and watershed and that copper sulphate be applied to overcome the algæ growth. At the time of the recent inspection it was stated that no serious trouble had arisen from the presence of algæ growths occurring in the reservoir.

In a report upon the supply dated December 29, 1921, it was recommended:

1. That the authorities in charge of the public water supply continue to maintain a careful supervision of the sanitary conditions existing on the watershed above the reservoir and maintain the diverting ditch free from weeds and other foreign matter in order that any surface wash may not reach the reservoir and cause any possible pollution of the supply.

2. That should it become necessary to resort to the use of Jones pond the sanitary conditions on the watershed be improved as outlined in the body of the report above.

3. That in case any trouble is experienced in carrying out these recommendations and in removing any objectionable conditions found to exist on the watershed, the village authorities apply to this Department for the enactment of rules and regulations for the sanitary protection of the watershed, provided for under the provisions of the Public Health Law.

4. That before the water from Jones pond is delivered to the public mains it should be sterilized with hypochlorite of lime or liquid chlorine in the manner outlined in the body of the report and an excess of chlorine be maintained at all times in accordance with the results of the starch iodide tests, a copy of which is attached.

5. That the village authorities continue to apply copper sulphate at frequent intervals in order to eliminate any objectionable tastes and odors in the public water supply resulting from the presence of algæ growths in the reservoir.

MOUNT MORRIS

A reinspection of the public water supply of the village of Mount Morris, Livingston county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on December 10, 1920. A previous inspection of the supply was made by this Department in the year 1917 and a report thereon published in the Annual Report of the Department for that year.

Mount Morris is located in the western part of Livingston county, about 40 miles southwest of Rochester. The present population has slightly decreased in the past few years and amounts to 3,300. Of the total population all are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of the board of water commissioners, of which Mr. Charles Bingham is president. The water supply is derived from Silver lake, located about 8 miles west of Mount Morris, and flows by gravity through a conduit under pressure to mechanical filters, and from them to the distributing reservoir located in the western part of the village. From the reservoir the water flows by gravity through the distributing system. The average daily water consumption is approximately 500,000 gallons.

Since the last previous inspection changes to the supply have been made in the following particulars: A Wallace & Tiernan solution feed chlorine apparatus has been installed in duplicate, housed in a small wood partitioned room at the filter plant. The apparatus formerly provided for the application of hypochlorite of lime to the filtered water has been abandoned. Silver lake is approximately 3 miles long and about one-half a mile wide, having an average depth of about 25 feet. The northern half of the eastern shore line for about a mile is thickly populated in the summer. This community consists of Fairview, with a population of about 250; Walkers and Silver Lake Assembly, with a population of 1,000. The winter population for the community on the lake shore does not amount to more than possibly 100 people. The largest settlement on the west shore is the Country Club, with about 15 or 20 houses. The northern section of the shore within the village limits of Perry is about five-eighths of a mile in length and some 600 to 800 feet in width. Numerous cottages are built closely together along streets parallel to the lake. No sewers have been constructed for the lake district. The Silver Lake Assembly has no sewerage system, but it is provided with a large cesspool to take care of the sewage. No cesspools are allowed to be constructed unless they are over 300 feet from the lake shore. The village of Walkers disposes of its sewage mostly by disinfection and uses the Kaustine system. Fairview, in the town of Castile, is provided with privies, most of which have removable containers. There are in all about 400 to 500 houses on the east shore of Silver lake, south of the village district of Perry. It is estimated that of these houses 75 per cent are provided with privies having removable containers, some of which are of the Kaustine type, 2 per cent are provided with cesspools, and the remainder with privies. South of the Assembly there are only 4 or 5 cesspools. Several barns having large manure piles were noticed and, while located on a precipitous slope, are probably outside of the limited distance provided by the rules and regulations, but the storm water from these districts, polluted by the drainage from a few privies, manure piles and surface wash, reaches the lake quickly over the steep slopes leading to the water. An inspection is made yearly of the lake district by the local authorities in charge of the Perry water supply to detect possible sources of pollution to the lake. Ice is cut every year about 200 feet north of the water intakes by the Silver Lake Ice Company, which employes a large number of horses and men for about 2 months during the year. The horses are driven on the ice, but the manure is scraped off as fast as it accumulates. This winter, however, it was learned that the ice company intends to cut ice by the use of a gasoline cutter, and it is thought that the use of horses will be decreased.

The filter plant consists of 2 New York Continental Jewel pressure mechanical filters, operating at a rate of 141.6 million gallons per acre per day. A solution feed Wallace & Tiernan chlorinating apparatus, No. 3976, is installed. The chlorine is applied to the raw water just before it enters the filters at a rate of about .26 parts per million. A duplicate apparatus is provided for use in case of emergency. A gas mask is also accessible. The reservoir shows evidence of growths of green algæ. No chemical treatment is used to free the water of algæ. The reservoir is not covered. The reservoir is situated on high ground, and its outer walls are about a foot above the ground surface, precluding the possibility of surface water entering the water supply. The reservoir is inclosed by a high fence having at its top 3 rows of barbed wire.

The village is provided by a sewerage system and a sewage treatment plant, which consists of a 2-story tank, which takes care of about 65 per cent of the population, the remainder being taken care of by private systems and old privies. The effluent from the tank is discharged without further treatment through a tile pipe into the tail race of the mill, a tributary to Canaseraga creek. From the recent investigation it appears that the previous recommendations of this Department have been carried out.

In a report on an inspection of the supply dated February 8, 1921, the following recommendations were made:

1. That the authorities in charge of the water supply continue to exercise their careful supervision over the operation of the water plant.
2. That the treated water be frequently tested for excess chlorine, in accordance with the instructions issued by this Department, and the rate of application of the chlorine regulated in accordance with the results of this test.
3. That the reservoir be repaired so that it may be cleaned when necessary.
4. That the authorities consider increasing the capacity of the filtration plant in order that a lower rate of filtration may be maintained.
5. That alum be used at all times.

NAPLES

A reinspection of the public water supply of the village of Naples, Ontario county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on April 22, 1921. Previous inspections of the supply were made by this Department in 1913 and 1916, and the reports thereon published in the Annual Reports of the Department for those years.

Naples is located 30 miles southwest of the city of Geneva, and has a population estimated at 1,100, about 90 per cent of which are served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners, of which Mr. D. H. Maxfield is president. The water supply is derived from Reservoir creek, about 2 miles south of the village. The water flows by gravity into the distribution system.

The watershed tributary to the supply is approximately 3.1 square miles in area and is used largely for agricultural purposes. It is possible that drainage from farm houses may at times reach the supply.

The village owns about 4 or 5 acres of land 2½ miles northwest of the village, on which are located 3 undeveloped springs known as the Boals springs. The village authorities have contemplated developing the springs as a source of water supply in preference to the present surface supply. Although the springs are situated in swampy ground, they are said to give a constant flow of water, and if properly developed should provide a satisfactory source of water supply. The largest spring is located in a wooded area and the other two springs are located in an open strip of land, on which a number of cattle are pastured, and considerable pollution from this source may reach the springs. It is possible, however, to eliminate this source of pollution by properly protecting the springs. The village authorities also intend to construct a reservoir between the springs and the village.

In a report dated May 16, 1921, the following recommendations were made:

1. That the village authorities obtain a new water supply by properly developing and protecting the Boals springs, or, in case the development of that source is found impracticable, by protecting the present water supply by the enactment of the rules and regulations and the installation and operation of a modern purification plant.
2. That the development of the Boals springs or the installation of a modern purification plant to treat the present water be carried out under the supervision of a competent engineer.
3. That, pending the development of the springs or the installation of a modern purification plant, a chlorinating apparatus be installed and the present supply treated continuously by the application of a proper amount of liquid chlorine.

NEWARK

A reinspection of the public water supply of the village of Newark was made by Mr. Earl Devendorf, a representative of this Division, on September 14, 1921. Previous inspections of this supply have been made by this Division in 1913, 1918 and 1921, and the reports thereon issued in the Annual Reports of the Department for the respective years.

Newark is an incorporated village with a present population estimated at 7,000 and is located in the southern part of Wayne county, approximately 50 miles west of Syracuse. The village is partly sewered with a separate system of sewerage, the sewage from which is discharged in the Canardus creek, after treatment in the disposal plant consisting of Imhoff tank sprinkling filter and final settling tank. Of the total population practically all are served with the public water supply. The waterworks are owned and operated by the municipality under the direction of the municipal board, of which Mr. Stanley Scarth is superintendent. The water supply is derived from Case creek on which an impounding reservoir and filtration plant has been constructed some 8 miles south of the village of Newark. The water flows by gravity through the filter plant to the village distribution system, consisting of some 17 miles of water mains. The consumption varies from 350,000 to 400,000 gallons per day throughout the winter season and is increased to between 600,000 and 700,000 gallons per day during the summer. Of the above amount the Commonwealth Chemical Company are using on an average of 50,000 gallons per day. Storage for the purified water is provided in an open distributing reservoir located on a hill just west of the village. The details of the purification plant and the waterworks system remain in general as described in the previous report.

The watershed area above the storage reservoir is approximately 7 square miles and consists mostly of farm land having a total population of about 250. Rules and regulations for the sanitary protection of the public water supply of Newark were enacted by this Department during the past year. At the time of the inspection the water in the storage reservoir was at a very low level, due in part to the long continued drought of the past summer, and in part to the serious leaks which have developed through the bottom of the reservoir. The village authorities had a pump in operation pumping water through a fire hose on the upper side of the reservoir near the point where the leaks are said to have developed in such a manner as to stir up the silt on the bottom. It is hoped by this method to deposit silt and mud over the coarse material and fill up the interstices in such a manner as to prevent the escape of the water. Alum was being used to coagulate the water before filtration, at an average rate of 1.2 grains per gallon. This amount of alum appeared to be giving a satisfactory flock. The aerator on the inlet to the coagulation basin was out of service, due to the low level of the water in the reservoir, the head not being sufficient to operate the aerator. As a result of the recent inspection it appears that the authorities in charge of the supply have in part carried out the previous recommendations. The authorities are endeavoring to maintain a strict sanitary patrol of the watershed and have provided equipment and chemicals necessary for making the simpler tests of the raw and treated water, and have had analyses made of the water on a number of occasions during the past year in order to determine the efficiency of the operation of the plant.

Chlorination apparatus had not as yet been installed at the time of the inspection.

The results of the examination of the filtered water made by the Division of Laboratories and Research show no reduction in color and turbidity. The reduction of the organic matter as measured by the albuminoid ammonia and oxygen consumed is 87 per cent and 33 per cent respectively. The results of the bacteriological examination show somewhat high total counts which may likewise be affected by the delay in transit.

In a report on an inspection of the supply dated December 27, 1921, the following recommendations were made:

1. That the authorities in charge of the supply continue their careful supervision of the public water supply of Newark, including frequent and careful sanitary patrols of the watershed, daily tests to determine the necessary amount of alum to be applied, frequent local analyses of the supply in order to determine the efficiency of the operation of the plant and the keeping of a careful record of the estimated amount of water treated and the amount of alum applied.
2. That the authorities in charge of the supply should provide the necessary apparatus for measuring and recording the flow of water through the plant in order that the proper rate of application of alum may be more easily and readily ascertained.
3. That the spring located north of the Nichol Block be abandoned and the use of this water for drinking and culinary purposes discontinued.

NEWBURGH

A reinspection of the public water supply of the city of Newburgh, was made by Mr. W. C. Emigh, assistant engineer in this Department, on June 3, 1921. Previous inspections of this supply were made by this Division in the years 1909, 1914 and 1917 and reports thereon published in the Annual Reports of the Department for those years.

Newburgh, a city with a population, according to the 1920 census, of 30,366, is located in Orange county on the west bank of the Hudson river. Nearly the entire population is served with water from the public supply. The waterworks are owned and operated by the municipality under the direction of a city manager. The water supply is derived from several streams, the waters of which are impounded in a reservoir known as Washington lake reservoir, located about 2½ miles west of the center of the city. From this reservoir the water is delivered by gravity to about two-thirds of the population of the city. The remainder of the city obtains its water from the high service system to which the water is pumped. The average daily consumption is said to be 399,000 gallons or about 130 gallons per capita.

The watershed tributary to the Washington lake reservoir is 8.8 square miles in area and consists of a moderately well populated farming district. Continuous care is exercised by the waterworks officials of the city to prevent, as far as possible, the pollution of the water supply. The privies on the watershed are of a sanitary type with tight vaults which are cleaned by the removal and burial of the contents at regular intervals. The watershed is inspected by Mr. Wolvern of the waterworks department each month. There are two main streams tributary to Washington Lake reservoir, both of which have been diverted from their natural courses at short distances above the reservoir and flow through artificial paved channels to the reservoir. In some places the streams pass through pasture land and the cattle are permitted to wade and stand in the streams. Washington Lake reservoir floods an area of 160 acres. In addition to the Washington Lake reservoir there is a smaller reservoir known as the Lockwood basin. Two small brooks flow into the basin. Water is drawn from this reservoir periodically, as may be desired, or necessary to prevent waste of water over the spillway.

The water supply is treated with chlorine which is applied by means of a Venturi control dry feed chlorinator of the Wallace and Tiernan type. The chlorine is applied in the main leading from the reservoir to the city distribution system. At the time of the inspection the compensator valve had been removed and returned to the manufacturer for repairs and the chlorinator was being operated without the automatic control and at as constant a rate as possible. The operator stated that under these conditions 18 pounds of chlorine are used per day, but that when the automatic control equipment is in operation the average application of chlorine is about 16 pounds per day, or a rate of 0.5 parts per million. Although the city distribution system is of the gridiron type, as previously noted, there are, in effect, a number of dead ends resulting from the separation of the upper service and lower service by valves. Trouble has been experienced with tastes and odors in the water supply. It has been customary to treat the water in the reservoir at such times with copper sulphate, and this treatment has been generally successful. The quantity of water available has, during times of extended drought, proved insufficient for the requirements of the city. To augment the supply it has been necessary on one or more occasions for the city to purchase water from the city of New York. The purchased water has been obtained from the Catskill aqueduct which passes over the Washington Lake watershed. Plans were prepared for the development of an additional source of supply and an application for approval of same was filed with the State Conservation Commission on December 30, 1919. After consideration of the plans they were rejected by the Commission.

In a report on an inspection of the supply, dated June 20, 1921, the following recommendations were made:

1. That the careful supervision of the watershed be continued.
2. That an additional unit for the treatment of the water with chlorine be installed and that both the new unit and the present unit be maintained in operating condition at all times.
3. That the water be treated with chlorine at all times in sufficient quantity to secure satisfactory disinfection of the water, as shown by the starch iodide excess chlorine test.
4. That consideration be given by the city authorities to the question of installing a modern filtration plant.

NEW ROCHELLE

A reinspection of the public water supply of the city of New Rochelle, Westchester county, N. Y., was made by Mr. Alfred Mullikin of this Division, on August 12, 1921. A previous inspection of this supply has been made by us in the year of 1913 and a report thereon published in the Annual Report of the Department for that year.

New Rochelle, a city with a present population of about 38,000, is located 17 miles north of the Grand Central station in New York City. Of the total population practically all are served with water from the public water supply. In addition the villages of Bronxville, Tuckahoe, North Pelham and Pelham Manor, a part of the town of Eastchester are furnished with water from this supply. The waterworks are owned and operated by the New Rochelle Water Company, of which Mr. Columbus O'Donnel Iselin is president. The water supply is derived largely from Hutchinson creek and Troublesome brook. There are 4 reservoirs maintained in connection with the water supply. The watersheds of the supply are traversed by numerous highways. The watershed of Hutchinson creek is traversed by numerous highways but is sparsely populated, and there appears to be no direct source of pollution in the vicinity of the reservoirs other than surface wash from the roads and fields due to heavy rains. The watershed area of Troublesome brook, however, contains numerous houses which frequently give rise to pollution to this source of supply.

The previous recommendations of this Department, in regard to applying for a revision of the rules and regulations to include streams and reservoirs on the Troublesome brook supply, in regard to connecting houses near reservoir No. 2 to the sewerage system and in regard to sterilizing the water supply with hypochlorite of lime, have been carried out.

In a report, dated September 7, 1921, on an inspection of the supply, the following conclusions were drawn:

1. That the water supply furnished by the New Rochelle Water Company is of a fairly satisfactory sanitary quality.
2. That the authorities in charge of the public water supply have carried out the previous recommendations of this Department.
3. That a careful sanitary patrol is maintained over the watershed to see that the rules and regulations enacted by this Department for the protection from contamination of the supply are carried out.

It was therefore recommended:

1. That the authorities in charge of the public water supply make a careful inspection of the watershed furnishing water to the gravity system to locate and eliminate, if possible, all sources of pollution.
2. That the authorities in charge of the public water supply pay particular attention to the sterilization of the gravity supply and apply sufficient hypochlorite of lime to properly sterilize the supply at all times.
3. That daily tests be made for excess chlorine in the treated water in accordance with the instructions issued by this Department, and the rate of application of the hypochlorite of lime be regulated in accordance with the results of these tests.

NEW YORK CITY

An investigation of the sanitary quality of the water supply of the city of New York was made, with a special reference to the question of certification by the United States Public Health Service for use for drinking and culinary purposes by interstate carriers. Inspections were made during the year 1921 and information was furnished by the Department of Water Supply, Gas and Electricity of the city of New York.

The city of New York is located at the southern extremity of the State and occupies the counties of New York, Kings, Bronx, Queens and Richmond. The city is divided into five boroughs, the names and boundaries of which are identical with those of the counties, excepting that New York county is called the borough of Manhattan, and Kings county the borough of Brooklyn. The population of the city is estimated at about 6,000,000, of whom 5,600,000 are served with water from the municipal supply and the remainder with water furnished by private water companies, one in Brooklyn, and the other in Queens. These companies are the Flatbush Water Works Company, in Brooklyn, and the Citizens Water Supply Company, the Urban Water Supply Company, the Jamaica Water Supply Company, the Woodhaven Water Supply Company, the Queens County Water Company, and the Montauk Water Company in Queens. The total water consumption of the city is about 660,000,000 gallons per day or 109 gallons per capita per day. There are 3,014 miles of cast-iron water mains varying in size from 66 inches to 4 inches in diameter, on which there are about 387,000 service taps, 106,000, or 36 per cent, of which are metered. A minimum of 30 pounds per square inch is set for the water pressure in Manhattan, although in many places the pressure reaches 65 pounds per square inch. The pressure in the other boroughs averages about 40 pounds per square inch. The municipal water supply is maintained and operated by, and the private water supplies are under the supervision of, the board of water supply, gas and electricity of the city, of which Nicholas J. Hayes is commissioner; John J. Dietz, deputy commissioner; Merritt H. Smith, chief engineer; and William W. Brush, deputy chief engineer.

The city is served by a system of combined sewers discharging into the waters of the Hudson and East rivers and New York bay at a large number of places.

The municipal supply is derived mainly from the Catskill (Esopus) watershed, the Croton watershed, and the Byram and Bronx watersheds. Some water is, however, taken from the wells on Staten Island and from the Brooklyn supply on Long Island, and it is understood that it will be necessary to continue the use of these two supplies until the completion of the work which will make the water from the Schoharie watershed available.

The Catskill supply available at the present time is that from the Esopus creek watershed. This shed covers an area of 257 square miles and its minimum yield as developed is estimated at 250,000,000 gallons per day. The present draft on this source of supply is about 375,000,000 gallons per day. The watershed is for the most part sparsely populated, a large part of the area being hilly and wooded. There are, however, several villages and hamlets on it and considerable land in the valleys is under cultivation. The density of population on the shed is estimated at about 30 persons per square mile.

The water is collected by an impounding dam across Esopus creek, at Olive Bridge, forming what is known as the Ashokan reservoir. This reservoir has a surface area of 12.6 square miles, an average depth of 50 feet, an available capacity of about 127,700,000,000 gallons, and a surface elevation of 590 feet above mean sea level. From the reservoir the water is conducted to the city distribution system by an aqueduct 120 miles long, terminating in Silver Lake reservoir of the borough of Richmond. The time of transit through this aqueduct, not including storage in the several reservoirs connected to it, is estimated at 3 days. From the Ashokan reservoir to the Kensico reservoir at Valhalla, a distance of about 75 miles, the aqueduct is designed to carry a little over 500,000,000 gallons per day. The larger part of the conduit is constructed of concrete and built in cut and cover. It is generally of horseshoe cross-section, 17 feet high and 17 feet 6 inches wide. The section, however, varies with the topography and character of the ground. In tunnels the section is 17 feet high and 13 feet 4 inches wide, and in pressure tunnels the form is circular and varies from

11 feet to 16 feet 7 inches in diameter. The Moodna Breakneck tunnel, which carries the water under the Hudson near Cornwall, is of this type, 14 feet in diameter, and passes under the river at a depth of 1,114 feet. In crossing valleys steel pipe siphons, consisting in general of 3 pipes, 9 to 11 feet in diameter, are used. All of these pipes have not yet been constructed, which limits the capacity of the aqueduct at the present time to about 375,000,000 gallons per day.

At Valhalla the Catskill water is discharged into the Kensico reservoir, which has been constructed at the site of the old reservoir formerly used to collect the water from the Bronx and Byram watersheds. This reservoir has a surface area of 3.5 square miles, an average depth of 52 feet and an available capacity of 30,570,000,000 gallons, the equivalent of about 50 days supply. Its normal surface elevation is 355 feet above sea level. The Kensico reservoir also receives water from the watersheds of the Bronx and Byram rivers, which cover an area of about 22 square miles and yield on the average approximately 18,000,000 gallons per day. The density of population on the watershed of these two rivers is about 25 persons per square mile. Most of the houses are located well back from the reservoir. A 10-foot circular concrete by-pass is provided by which the water may be conducted directly to the city without passing through the Kensico reservoir.

From the Kensico reservoir the aqueduct continues for a distance of 17 miles to the Hillview distributing reservoir in Yonkers just north of the city line of New York. This reservoir has a capacity of 929,000,000 gallons. Its surface elevation is 295 feet which determines the pressure of the Catskill water supply in the city. From this reservoir the city pressure tunnel varying from 15 to 11 feet in diameter, extends through the Bronx and the full length of Manhattan and under the East river to a shaft in Brooklyn from which a 68-inch steel pipe extends north to Queens and a 48-inch cast-iron pipe extends south through the Bay Ridge district of Brooklyn to 79th street where it connects to the 36-inch flexible pipe laid under the Narrows to Richmond. Here the line terminates in Silver Lake reservoir, a reservoir of 438,000,000 gallons capacity with a surface elevation of 228 feet.

In order to measure the flow of water through the aqueduct, 3 Venturi meters have been installed 1 near the Ashokan reservoir, 1 above the Kensico reservoir and 1 below the Kensico reservoir.

Catskill water is at present being used principally to supply Brooklyn, Queens, Richmond and the higher parts of Bronx, to which places it can be conducted without pumping although it is necessary to pump a small amount of the Catskill water in Richmond and the 3d ward in Queens to supply certain high districts. Part of the supply is available for use in the business section of Manhattan. In Richmond the Catskill supply is supplemented by water from the wells at the Grant City station and in Brooklyn by water pumped from the old Brooklyn supply.

The Catskill water supply is protected by rules and regulations enacted by the commissioner of water supply, gas and electricity of New York City and approved by the State Department of Health on February 1, 1917, and the board of water supply, gas and electricity of the city maintains a uniformed force in the shed to enforce these rules and regulations and to protect the supply from contamination. As a further protection the water of the Esopus creek, through which most of the runoff of the watershed reaches Ashoken reservoir, was treated with chlorine at Boiceville. The amount of chlorine used has until recently been about 0.11 of a part per million parts of water.

The water is aerated to remove to some extent tastes and odors which may develop and is treated with liquid chlorine to destroy any pathogenic bacteria it may contain. The aerators are located just below the Ashokan and Kensico reservoirs and are similar in design, each consisting of a basin some 250 by 500 feet in size and each containing some 1,800 vertical nozzles so formed as to throw the water into the air in the form of a spray. In addition to the chlorination of the stream entering the Ashokan reservoir the entire Catskill supply is treated with liquid chlorine in the screen chamber below the Kensico reservoir. Chlorine has been applied during the first part of 1921, in the proportion of about 0.05 of a part per million.

Chemical and bacteriological examinations of samples of the water taken daily at certain points and weekly at other points, are made at the laboratories of the Board of Water Supply, Gas and Electricity. The average figures for the year 1920 are given in the following table:

	Ashokan reservoir outlet	Kensico outlet, chlorinated	Tap, Queens	Tap, Brooklyn	Tap, Richmond
	Daily	*Daily*	*Weekly*	*Daily*	*Weekly*
Turbidity	3	2	2	2	2
Color	10	8	7	7	8
Odor	lv.	lv.	lv.	lv.	lv.
	Weekly	*Weekly*	*Weekly*	*Weekly*	*Weekly*
Free ammonia	0.022	0.01	0.003	0.001	0.002
Albuminoid ammonia	0.038	0.040	0.041	0.038	0.049
Nitrites	0.001	0.001	0.001	0.001	0.001
Nitrates	0.04	0.05	0.08	0.07	0.07
Chlorine	1.0	1.21	1.3	1.2	1.2
Hardness	14.0	15.0	17.0	17.0	16.0
Alkalinity	7.0	8.0	9.0	9.0	10.0
Iron	0.19	0.00	0.21	0.15	0.13
	Daily	*Daily*	*Weekly*	*Daily*	*Weekly*
Bacteria per c.c., 37° C	68	5	19	22	56
B. Coli. 0.1 c.c	....	....	....	4	4
B. Coli, 1 c.c	5	1	....	8	6
B. Coli, 10 c.c	21	4	19	21	29

Figures for B. Coli are percentages of positive results.

Water from the Schoharie watershed which is adjacent to the north side of the Esopus shed, will not be available for several years. This shed has an area of 314 square miles and an estimated yield of about 250,000,000 gallons per day. The water will be collected by an impounding reservoir formed by the construction of a dam across Schoharie creek at Gilboa. The surface area of the reservoir will be 1.8 square miles, the average depth 58 feet and the available capacity 20,000,000,000 gallons. The surface elevation of the reservoir will be 1,130 feet. A tunnel under the Shandaken range of the Catskill mountains 18 miles long and 10 feet 3 inches by 11 feet 3 inches in cross section will conduct the water from the Schoharie reservoir to the Esopus creek at Allaben where the water will flow in the creek channel for 11 miles to the west end of the Ashokan reservoir. Work on the development of this source of supply is now being carried on by the board of water supply of the city of New York and it is estimated that the work will be completed by 1924.

The Croton water supply is derived from a watershed having an area of about 375 square miles covering the eastern half of Putnam county and a large district in the northeastern part of Westchester county. A large part of the area is used for agricultural purposes and there are several villages and hamlets on it. The density of population is about 50 persons per square mile. In addition to the surface water from this area the supply also receives the treated sewage from Brewster and Mt. Kisco. The water from the shed is collected in 6 controlled lakes and 10 sewage reservoirs, the lowest and largest of which is the Croton reservoir formed by the construction of a dam across the Croton river about a mile above Quaker bridge. This reservoir has a surface elevation of 200 and a capacity of 33,800,000,000 gallons. The total storage capacity of all reservoirs and lakes on the shed is about 104,000,000,000 gallons. As developed the minimum yield is approximately 336,000,000 gallons per day and the average yield about 400,000,000 gallons per day.

Two aqueducts about 35 miles long conduct the water from the Croton reservoir to the city. One of these, known as the old Croton aqueduct, follows along the east side of the Hudson river to Yonkers where it turns eastward through Bronx and crosses the Harlem river at and by means of High bridge, and continues to the Central Park reservoir. This aqueduct is of horseshoe cross section 8 feet 5 inches high and 7 feet 5 inches wide except in the city where portions of it have been replaced by cast-iron pipe. It has a capacity of about 90,000,000 gallons per day. Its total length is 38.1 miles. The other aqueduct, known as the New Croton aqueduct, tunnels through the hills and takes a more direct course to the city, lying in general several miles east of the old aqueduct. It passes under the Harlem river in a pressure tunnel 300 feet below sea level and terminates at the 135th street gate house from which the water is carried by eight 48-inch cast-iron pipes to the old aqueduct, the distribution system and the Central Park reservoirs. Through the first 25 miles of its 33 miles of length the aqueduct is of masonry construction, horseshoe shaped in cross section, 13 feet 6 inches by 13 feet 6 inches in size, except across Gould's swamp where it is depressed and is circular in form, 14 feet 3 inches in diameter. At the end of this portion of the aqueduct near Van Cortlandt park it is connected with the Jerome Park receiving reservoir. This portion of the aqueduct has a capacity of 300,000,000 gallons per day making the total capacity of the 2 aqueducts between the Croton reservoir and the city, about 390,000,000 gallons per day. From the Jerome Park reservoir to the terminal gate house at 135th street, a distance of a little less than 7 miles, the aqueduct is constructed as a pressure tunnel 12 feet 3 inches in diameter except in the Harlem river siphon where it is 10 feet 6 inches in diameter. Below the 135th street gate house the water is conducted in eight 49-inch cast-iron pipes as noted above.

The Croton water is used in portions of Manhattan and Bronx and is distributed to certain sections below about 40 feet in elevation from the Jerome Park reservoir, the 136th Street gate house and the Central Park reservoirs. For certain higher districts it is pumped at the stations located at 79th street and Harlem river and at 98th street and Columbus avenue and at certain times at the Jerome Park pumping station in the Bronx. The quantity of water pumped is between 65,000,000 and 100,000,000 gallons per day.

The Jerome Park reservoir has a capacity of 773,000,000 gallons and a surface elevation of 134 feet. The Central Park reservoirs have a total capacity of 1,205,000,000 gallons and a surface elevation of 119 feet. In addition to these reservoirs there are the High Bridge reservoirs of 11,000,000 gallons capacity with a surface elevation of 218 feet, the High Bridge standpipe with a surface elevation of 336 feet. The 98th Street standpipe with an elevation of 229 feet and the Jerome Park standpipe with an elevation of 320 feet, which are used in connection with the pumping station.

The entire supply of water from the Croton shed is chlorinated at Dunwoodie where the chlorine has been, during the first part of 1921 applied to the water at an average rate of about 0.13 of a part per million. In addition to this, several polluted streams on the Croton watershed are treated with chlorine. The effluent from the sewage disposal plant at Mount Kisco consisting of settling tanks, contact beds and sand filters, is treated with 15 parts per million of chlorine. The sewage of Brewster is treated with 400 parts per million of chlorine. Katonah brook at Katonah is treated with 3.3 parts per million. The Kisco River below Mount Kisco is treated with 1.6 parts per million. Lake Glenida at Carmel is treated with 0.2 parts per million. Tonetta brook at Brewster is treated with 2.06 parts per million.

As in the case of Catskill, daily and weekly samples are taken at different points and analyzed at the laboratories of the department of water supply, gas and electricity of the city. The average results of these analyses for 1920 are given in the following table:

	Croton lake outlet	Aqueduct at Dunwoodie, chlorinated	Tap in Manhattan
	Weekly	*Daily*	*Daily*
Turbidity	2	2	2
Color	17	15	14
Odor	1 veg.	1 veg.	1 veg.
	Weekly	*Weekly*	*Weekly*
Free ammonia	0.067	0.003	0.000
Albuminoid ammonia	0.005	0.059	0.064
Nitrites	0.001	0.001	0.001
Nitrates	0.11	0.16	0.16
Chlorine	1.9	2.7	2.7
Hardness	29	38	39
Alkalinity	18	30	30
Iron	0.10	0.12	0.19
	Weekly	*Daily*	*Daily*
Bacteria per c.c, 37° C	40	62	31
B. Coli, 0.1 c.c	6	1	0
B. Coli, 1 c.c	19	4	2
B. Coli, 10 c.c	35	13	9

Figures for B. Coli are percentages of positive samples.

The old Brooklyn supply now held in reserve and used to some extent to supplement the Catskill and Croton supplies, is derived from streams, wells and infiltration galleries lying on Long Island in the district between Brooklyn and Amityville. The total area of the watershed tributary to this supply is approximately 168 square miles. The infiltration galleries about 6 miles long at a depth of from 10 to 15 feet, yield about 40,000,000 gallons per day. The driven wells of various depths from 30 to several hundred feet yield approximately 60,000,000 gallons per day. The total dependable yield of the shed is about 150,000,000 gallons per day. The quality of the gallery and well waters has generally been considered satisfactory for use without treatment except that if drawn on too heavily the water from some of the wells becomes brackish. The water of the surface supply is chlorinated. There are 27 pumping stations arranged to take water from the different surface supplies and deliver it through a system of pipes including a 72-inch steel main extending from Massapequa to the main pumping station at Ridgewood which lifts the water to the Ridgewood reservoir, the surface elevation of which is 172 feet and the capacity 300,000,000 gallons. This reservoir is located on a hill where there are few passers-by and protected from trespassing by an iron railing. The reservoir is now used in connection with the Catskill supply as well as to receive water from the Brooklyn supply. Certain high level districts in Brooklyn are furnished with water by additional pumping in connection with the Mount Prospect reservoir and the Mount Prospect tower. The elevation of the former is 200 feet and its capacity 19,000,000 gallons. The elevation of the latter is 280 feet.

Water from this Long Island shed may also be used in the third ward of Queens. There are three standpipes of comparatively small capacity located in this district. The Flushing standpipe having an elevation of 221 feet, the College Point standpipe having an elevation of 192 feet and the Whitestone standpipe having an elevation of 181 feet.

The following is the average of the results of analyses of water from the Brooklyn supply taken at the Ridgewood pumping station during 1920:

Turbidity	2	Chlorine	5.8
Color	6	Hardness	21.0
Odor	1-v.	Alkalinity	6.0
Free ammonia	0.028	Iron	0.31
Albuminoid ammonia	0.008	Bacteria per c.c., 37° C	35
Nitrites	0.001	B. Coli, 10 c.c	Absent
Nitrates	0.30		

In Richmond the water supply was formerly obtained from several groups of wells connected to these pumping stations. These wells were capable of yielding about 15,000,000 gallons per day. Two small reservoirs and a standpipe in addition to the Silver Lake reservoir were used in connection with this system. The main station at Grant City with its walls is now used to supply water to supplement that delivered to Silver Lake reservoir by the Narrows siphon, the capacity of which is only equivalent to about two-thirds of the water consumption of the island.

The average results of the weekly analyses of samples from the Grant City wells, from which most of the supply is being taken at present, during 1920 are as follows:

Turbidity	1	Hardness	183
Color	4	Alkalinity	105
Odor	0	Iron	0.15
Free ammonia	0.010	Bacteria per c.c, 37° C	53
Albuminoid ammonia	0.008	B. Coli, 0.1 c.c	0
Nitrites	0.000	B. Coli, 1 c.c	0
Nitrates	2.41	B. Coli, 10 c.c	5
Chlorine	47.2		

In the Boroughs of Brooklyn and Queens there are several private water companies which derive their water from local wells and furnish a total of about 40,000,000 gallons per day to a population of some 400,000 persons.

In Brooklyn the Flatbush Water Works Company supplies about 13,000,000 gallons per day to the 29th ward.

In Queens the private water companies are as follows:

The Citizens' Water Company supplies a little over 12,000,000 gallons per day to the 2nd ward.

The Urban Water Supply Company supplies about 1.3 million gallons per day to a small section of the 2nd ward.

The Woodhaven Water Supply Company supplies about 3.25 million gallons per day to the 4th ward.

The Jamaica Water Supply Company, about 6½ million gallons per day to a part of the 4th ward.

The Queens County Water Company supplies about 3¼ million gallons per day to the 5th ward.

Broad Channel Corporation supplies about 20,000 gallons to a small part of the 5th ward.

The Montauk Water Company, owned by the Long Island railroad, furnishes about 2,000,000 gallons per day, practically all of which is used by the railroad company.

The results of analyses of the water from the more important of these supplies, during 1920, are given in the following table:

	FLATBUSH WATER COMPANY		CITIZEN'S WATER COMPANY		
	North pumping station	South pumping station	Pumping station No. 1	Pumping station No. 2	Pumping station No. 3
	Monthly	*Monthly*	*Monthly*	*Monthly*	*Monthly*
Turbidity	1	1	1	1	4
Color	3	3	2	2	8
Odor	0	0	0	0	0
Free ammonia	.000	.002	.000	.000	.004
Albuminoid ammonia	.004	.003	.000	.000	.004
Nitrites	.002	.006	.002	.049	.005
Nitrates	9.65	5.91	8.96	6.68	1.10
Chlorine	23.5	16.2	18.5	22.8	51.2
Hardness	219.0	172.0	260	254	150
Alkalinity	118.0	108.0	162.0	142.0	92
Iron	0.15	0.09	0.08	0.10	0.97
Bacteria per c.c., 37° C	28	20	7	3	23
B. Coli, 0.1 c.c	0%	0%	0%	0%	0%
B. Coli, 1 c.c	0	0	0	0	0
B. Coli, 10 c.c	0%	0%	0%	0%	20%

	Urban Water Company	Jamaica Water Company, station No. 2	Queens County Water Company Valley Stream	Broad Channel Water Company	Woodlawn Water Company, main station
	Monthly	*Monthly*	*Monthly*	*Monthly*	*Monthly*
Turbidity	1	3	1	4	1
Color	2	7	2	7	2
Odor	0	Gas	0	0	0
Free ammonia	.001	.011	.000	.003	.004
Albuminoid ammonia	.005	.005	.002	.002	.005
Nitrites	.002	.004	.001	.001	.003
Nitrates	7.72	2.54	.02	.01	5.02
Chlorine	34.4	17.5	3.8	77.0	9.9
Hardness	288	86	11	19	102
Alkalinity	164	26	8	19	58
Iron	.06	.71	.03	.54	.07
Bacteria per c.c., 37° C.	36	1	7	31	.4
B. Coli, 0.1 c.c.	0	0	0	0	0
B. Coli, 1 c.c.	0	0	0	0	0
B. Coli, 10 c.c.	60	10	0	22	0

All the water supplies of the city are under the supervision of the Department of Water Supply, Gas and Electricity which keeps a force of about 40 inspectors on the watersheds to protect them from contamination and maintains three laboratories, one at the Ashokan gate house, one at the Mt. Kisco gate house and one at the Mt. Prospect reservoir, Brooklyn. Daily bacteriological examinations are made of samples of water taken at 17 points on the system and weekly and monthly examinations of samples of water taken at other points.

The question of the filtration of the water supply of the city has been considered and provision for the installation of filters made near the Catskill aqueduct. No definite steps have, however, been taken toward the installation of such a plant.

All the railroads entering New York City use water from the public supply of the city for drinking and culinary purposes on their trains; and since section 13 of the Interstate Quarantine Regulations requires that water provided for drinking or culinary purposes on railroad cars engaged in interstate traffic shall be from a source which is certified and approved as producing a water of satisfactory sanitary quality and safety, and it is the custom of the U. S. Public Health Service to base such certifications on information furnished by the State Health Boards, it has become necessary for the State Commissioner of Health to examine into the suitably of the water supply for use for drinking and culinary purposes in interstate traffic. The results of analyses of the water as given in the above tables seem to indicate insufficient protection from contamination or the application of too small amounts of chlorine.

For the purpose of discussing the matter conferences were held at the office of the State Department of Health in New York City on April 15th and July 8th, 1921. At the April 15th conference there were present: Dr. Matthias Nicoll, Jr., Chairman; Dr. A. B. Wadsworth and Mr. Theodore Horton, representing the State Department of Health and Dr. W. H. Park and Dr. F. E. Hale, representing the City of New York.

At the July 8th conference there were present: Dr. Herman M. Biggs, State Commissioner of Health; Dr. Matthias Nicoll, Jr., Deputy State Commissioner of Health; Mr. Theodore Horton, Chief Sanitary Engineer of the State Engineer's Office; Mr. C. M. Sheehan, Deputy Commissioner of Water Supply, Gas and Electricity, City of New York, N. Y.; Wm. W. Brush, Deputy Chief Engineer, Department of Water Supply, Gas and Electricity; Dr. F. E. Hale, Chemist, Department of Water Supply, Gas and Electricity; Dr. J. A. Shears, Sanitary Expert of the Department of Health of the City of New York, and Mr. Sol Pincus, Associate Engineer, U. S. Public Health Service.

At the meeting on July 8 a full discussion was had and opinions expressed with reference to general and specific sources of contamination of protective and corrective measures carried out in previous years and at the present time, of laboratory analyses of the various sources of supply by the city and state laboratories, and the coordination of these data and conditions with the typhoid fever records of the city. Although different opinions were expressed by those present with reference to the effectiveness of corrective and protective measures employed by the city to render the water supply safe against not only general but incidental and unusual sources or acts of contamination of the Catskill and Croton watershed, all were agreed that the only proper course for the city to assume in this regard is to take every possible precaution and provide every possible safeguard, within reasonable limits of cost, that is necessary for the full protection of this supply.

It was therefore generally agreed by those present, and accepted as a precedent to the certification of the satisfactory quality of the supply by the United States Public Health Service, that the following program be carried out:

1. To install at Pine Hill, Phoenicia, Katonah and at other points on the watersheds of the Catskill and Croton supplies where the pollution is most concentrated, sewage disposal systems and plants like the one now being installed at Chichester.

2. To improve the method of application and distribution of chlorine to the stream flow, the chlorination plant now being operated on the Esopus creek just above its point of entrance to Ashokan reservoir, using chlorine in amounts that will give an excess of 0.1 of a part per million by the ortho-tolidin test.

3. To establish chlorination plants, so far as it is practicable, at the outlets of all open reservoirs not effectively protected against access by land area and by man proof fences. These points to be determined after investigations by representatives of the State Department of Health and the Department of Water Supply, Gas and Electricity.

4. With reference to the proper amount of chlorine which should be applied for the disinfection of the water supply:

   (a) Apply continuously at all points of application on the system except on the Esopus creek above referred to, chlorine in quantities sufficient to give an excess of 0.1 part per million, is determined by the ortho-tolidin test, and never less than 0.2 parts per million. This procedure to be followed pending results of tests outlined below.

   (b) Institute at once and continue for at least a period of one year daily or weekly tests as may be mutually agreed upon at one main chlorination plant on the Catskill supply and at one on the Croton supply in order to determine the optimum quantity of chlorine necessary for bacterial removal and avoidance of residual chlorine odors, such tests to include the determinations stated below, the amount of chlorine to be applied in each case in four different amounts namely, 50 per cent, 75 per cent, 100 per cent, and 120 per cent of the amount necessary for complete absorption of organic matter, using the 5 minute contact, and collection of samples to be taken after 5, 15 and 30 minutes period of contact (that is for bacteriological results and such other chemical results as practicable).

      1. Turbidity.
      2. Color.
      3. Albuminoid ammonia.
      4. Oxygen consumed.
      5. Dissolved oxygen.
      6. All odors, including the odors of chlorine, microscopical organisms and secondary odors resulting from chlorine.

7. Chlorine.
8. Kjeldahl nitrogen.
9. Total counts on gelatin.
10. Total counts on agar.
11. B. Coli 3 dilutions.
12. Other determinations as experience may suggest.

(c) From the study of the above results carried throughout one year, showing the variation in range of the quality of these waters and the results of application of chlorine under the different methods and conditions of application to determine more definitely a procedure or system of application of chlorine which will give optimum results, that is, highest bacterial efficiency with safe margin or a factor of safety in the avoidance of residual odors in the waters as delivered to the consumers, due consideration to be given to direction and residual chlorine odors.

(d) In connection with these tests to run a series of control tests showing definitely the relation and efficiency of the orthotolidin and the starch iodide tests for practical operation and control, giving attention to color, temperature and other conditions which might affect the result.

5. Where present laboratory tests are not being carried out in strict conformity with the standard methods as adopted by the American Public Health Association that such methods be adopted either as a substitution or at least in addition to the present methods of technique.

In accordance with this agreement orders were issued by the Department of Water Supply, Gas and Electricity of the city on and before July 28, 1921, that the quantity of chlorine applied to the water at Kensico, Dunwoodie and Brooklyn should be such as to give an excess of 0.1 of a part per million of free chlorine in the treated water and that the minimum dose should be 0.2 of a part per million.

On August 19, 1921, most of the distributing reservoirs of the city were visited for the purpose of observing possible sources of pollution and determining the feasibility of protecting the reservoirs from incidental pollution by excluding access to the reservoirs by man proof fences or by chlorinating the supplies at the outlets from the reservoirs.

Hillview reservoir, the main distributing reservoir for the Catskill supply is located on a hill with side slopes in all directions, but with a level strip on top of the embankment on which there is a walk and driveway. A heavy woven wire fence about 8 feet high surrounds the reservoir at the top of the inner slope of the embankment and inside of the walk and driveway. Since the public has access to the area outside of the fence line during both day and night there is obviously danger of incidental pollution by visitors who frequent the location in considerable numbers particularly on Sundays and holidays. There is no patrol of the grounds around the reservoir other than the occasional visits of the men who operate the gates. At the time of the inspection there were some 300 to 500 seagulls on and above the water of the reservoir. No systematic effort has been made to exclude these gulls. The representatives of the city thought that there would be considerable opposition to the exclusion of the public from the area around the reservoir. For this reason it seems that chlorination of the water as it leaves the reservoir would probably be the more expedient method of protecting the supply. This could be accomplished, it was learned, by transferring the chlorination plant from the Kensico reservoir and arranging it to apply chlorine at the outlet gate house of the Hillview reservoir. When this is done a patrol of the reservoir should of course be established to prevent so far as possible pollution of the water in the reservoir.

Williams Bridge reservoir is fed by Catskill water from Kensico, but is used only in case of emergency. The reservoir is on a hill with steep slopes and is surrounded by two fences, one at the bottom of the embankment and one on the coping around the reservoir. The most practical method of protecting this reservoir would seem to be the reconstruction of the fence at the bottom of the embankment so as to make it man proof and the exclusion of the public from the ground around the reservoir. Chlorination might be used if found necessary to protect the reservoir from pollution by seagulls.

Jerome Park reservoir is the main distributing reservoir for the Croton supply. On one side of this reservoir there is a high wall and embankment on the other side a steep embankment at the bottom of which there is a fence. The wall and embankment on the first side are practically man proof, but the fence on the other side is not. The public is not permitted to use the grounds around the reservoir, but boys and other unauthorized persons trespass upon them at times. No attempt is made to prevent seagulls from reaching the reservoir. The best method of protecting this reservoir appears to be the substitution of a man proof fence for the present fence and the removal of all brackets or projections from the wall so as to make it impossible to scale it. In addition to this, a regular patrol of the grounds should be established to prevent any possible trespassing and to keep away the gulls.

The old Central Park reservoir is located in Central park and is fed by water from the Croton supply. It is protected by a low fence and the regulations prohibit the public from trespassing near it. It would seem desirable that a man proof fence be constructed around this reservoir and a patrol maintained to effectively exclude all trespassers.

The new Central Park reservoir, the larger of the two in Central park, is located practically adjacent to the old reservoir. It is accessible to the public by the paths which extend along the top of the embankment, and is protected only by an easily scaled fence on the coping of the wall which surrounds the reservoir near the top of the inner slope of the embankment. Considerable opportunity for incidental pollution obviously exists. It is understood that from two to five persons drown in this reservoir each year. In view of the fact that the public would probably object to the erection of a man proof fence a hundred feet back from the edge of the water and the prohibiting of trespassing inside of the fence, it appears that the better method of protecting the supply from this reservoir, if found practicable, would be to chlorinate the water at the points where it leaves the reservoir and to substitute a higher fence less easily scaled than the present one.

The High Bridge reservoir is an equalizing reservoir which takes the surplus from the 179th street pumping station connected with the Croton supply and discharges it into the distribution system again through the same pipe when the demand requires. The reservoir is protected by two fences, one at the top and the other at the bottom of the embankment, but the fences are not man proof and trespassers obtain access to the reservoir. The best method of protecting the reservoir would obviously be to replace the present fence with man proof ones and maintain a patrol on the grounds.

The Ridgewood reservoir in Brooklyn receives water from the Catskill supply and the Brooklyn supply. It is surrounded by low, easily scaled fences. There seems to be no reason why this reservoir cannot be satisfactorily protected by the construction of a man proof fence at the bottom of the embankment and the establishment of a suitable patrol.

The Prospect reservoir, which is supplied with water from the Catskill supply, is surrounded by a steep embankment at the top and bottom of which are iron fences. The reservoir could be easily protected by making the fence at the bottom of the embankment man proof and establishing a suitable patrol.

Silver Lake reservoir, in the borough of Richmond, is the terminus of the aqueduct from the Ashokan reservoir. The ground around the reservoir is used for park purposes and is protected only by a fence similar to the one at the Hillview reservoir. Owing to the fact that objection would probably be made to the erection of a man proof fence and the exclusion of the public from the area around the reservoir, it appears that it would be best to resort to chlorination to protect the water of this reservoir. A patrol should of course be established to protect as far as possible the reservoir from incidental pollution by possible trespassers.

The Clove reservoir, in the borough of Richmond, is surrounded by a fence which is only five or six feet away from the edge of the embankment.

and the public has access to the grounds around the reservoir up to the fence. The use of the grounds around this reservoir as a park is unimportant and the erection of a man proof fence seems to be the most practical method of protecting the water.

On August 18, 1921, Woodland, Phoenicia and Chichester were visited for the purpose of examining into the manner of the disposal of the sewage from those places with special reference to the pollution of the city's water supply.

At Chichester a sewerage system is being installed by the city of New York and the disposal plant with the exception of the tanks has been practically completed. It is expected that the system and plant will be completed in the near future. When completed and put in operation the system and plant will correct the insanitary conditions formerly existing at this place.

Woodland is a summer colony and consists of a hotel, several cottages and a boys' camp. It is served by a sewerage system that discharges into a series of cesspools the effluent from which flows into Woodland creek, a tributary of Esopus creek. At the time of the inspection this effluent was comparatively clear. An analysis by the laboratory of the department of water supply, gas and electricity indicates considerable dilution but little oxidation. The substitution of a modern filtration plant for the present system of cesspools would seem desirable.

Phoenicia, with a population of almost 500, has a public water supply and no sewerage system. The village is served principally by cesspools, and there are practically no drains or overflows which lead directly into the creek. The soil is, however, coarse and gravelly and undoubtedly considerable very poorly purified sewage finds its way to the stream. One or two cesspools were overflowing at the time of the inspection and it is understood that it is necessary to dump the contents of one of the hotel cesspools into the gutter at frequent intervals in order to avoid flooding the cellar. Since the village has a water supply and since conditions will undoubtedly become gradually worse and more difficult to correct, it seems advisable that a sewerage system and sewage disposal be installed as soon as practicable.

Pine Hill was visited on July 7, 1921. The summer population of this village is some 2,000 persons. Numerous sources of pollution of Esopus creek exist in the form of overflowing cesspools, drains and ditches, and it is understood that there are some 18 or 20 points of pollution in the village. A sewerage system and sewage disposal works should obviously be constructed in this village without delay.

On August 18, 1921, Boiceville was visited and the method of applying chlorine to the Esopus creek and the condition of the creek with reference to the more effective application of the chlorine inspected. The present plant is arranged for the application of chloride of lime but is to be replaced in the near future by a plant of the solution feed type for the application of liquid chloride. The flow exceeds 500,000,000 gallons per day only for 5 per cent to 10 per cent of the time, and it is proposed to treat the flow up to this volume with sufficient chlorine to give an excess of 0.1 of a part per million. The creek at this point is quite variable in width and irregularly filled with boulders which divide the flow into unequal and ununiformed channels. In order to satisfactorily apply the chlorine it would seem necessary that the flow should be concentrated into a width of from 40 to 50 feet by diverting dams so constructed as to allow no leakage. The chlorine should be applied at points about 5 feet apart across this restricted area. It is understood that Mr. Wheeler will work out plans along these lines.

The matter of the scope and technique of the laboratory work to be carried on in connection with the analyses mentioned above was discussed with Dr. Hale on August 17 and 18, 1921.

It was generally agreed that the same work should be carried on for both the Croton and Catskill supplies, that for the Croton supply being done at Dunwoodie and that for the Catskill at Kensico or at Hillview in case the chlorinating plant is moved to the latter place. The samples of raw waters are to be examined for turbidity, color, odors, including the direct and secondary odors due to chlorine and microscopic organisms, albuminoid ammonia, Kjeldahl nitrogen, chlorine, oxygen consumed, dissolved oxygen, total counts on gelatin (2 determinations); total counts on agar (2 determinations); B. coli, 3 dilutions, with bile. The examination of the treated water is to comprise: Determinations of counts on gelatin and agar, and of B. coli as well as albuminoid ammonia, chlorine and Kjeldahl nitrogen, of the raw water to which chlorine has been applied in the following percentage of complete absorption of organic matter, namely 50 per cent, 75 per cent, 100 per cent, and 125 per cent, using in each case 4 different periods of contact with chlorine, namely: 5 minutes, 15 minutes, 30 minutes and 1 hour.

In reference to the determination of free chlorine it would seem best that a series of tests be run to compare the relative merits of ortho-tolidin and starch iodide. This is important because while ortho-tolidin is generally considered the more sensitive it has under some conditions failed to give uniform and reliable results.

In general the analyses should be made in accordance with the "Standard Methods of Water Analyses" of the American Public Health Association. Since, however, the laboratories of the city use the green bile media for the B. coli test there seems to be no objection to the use of this media for the routine work provided sufficient tests are made in accordance with the "Standard Methods of Water Analyses" to determine the relation between the results given by the 2 methods. Generally the use of 3 dilutions in the test for B. coli would seem advisable. The method used by the U. S. Public Health Service might however be employed at intervals in order to establish a standard of comparison between the 2 methods.

On October 11, 1921, the sanitary conditions of the Croton watershed, giving particular attention to the conditions at Bedford Hills, Brewster, Carmel, Katonah, Patterson, Pawling and Mt. Kisco, were inspected.

Bedford Hills is an unincorporated village of about 1,500 population. It has a water supply but no sewerage system, privies and cesspools being in general use. Many of the houses are located on the hills sloping toward the tributary of Croton lake which flows through the village so close to the stream that there is considerable danger of contamination of its water. It is understood that the city intends to chlorinate the water of this stream at a point near Katonah, although such a chlorination plant has not yet been established. It would seem advisable that a sewerage system and sewage disposal plant should be installed in this village.

Brewster, a village of about 2,500 inhabitants, is located on the east branch of the Croton river, one of the tributaries of Croton lake. The village has a municipally owned water supply. There is no comprehensive sewerage system although about 15 per cent of the population are served by a small system, the sewage from which is disposed of by chlorination and subsurface irrigation. The wastes from a cheese factory and some incidental sewage pollution enters one of the small streams passing through the village. This stream is passed through a crude roughing filter before reaching the reservoir. The city prepared plans for a sewerage system and sewage disposal plant for this village several years ago, but no steps have been taken toward the installation of the system or plant. It would seem very important that the sewerage system and sewage disposal plant for this village should be installed and put in operation with as little delay as possible.

Carmel, a hamlet of about 600 population, is located on Glenida lake, the water of which is chlorinated at the outlet of the lake before it reaches the reservoir about 25 miles away. There is no public water supply except that the city furnishes water to the school and some 30 houses. There is no general sewerage system. Some 8 or 10 houses have sink drains which discharge into the gutters, and a number of houses on Main street have sink drains which discharge on the ground not far from the edge of Glenida lake. A seminary, having a population of about 200, located at Carmel, has its own sewage disposal system. Representatives of the city seem to be of the opinion that the installation of a sewerage system and sewage disposal plant for this hamlet is not urgent. Since, however, the sewage might be readily conducted to a point not on the watershed of the Croton supply it would seem desirable that the sewerage system and sewage disposal plant be installed and the sewage disposed of at such a point.

Katonah, with a population of 1,000, has a water supply furnished by a private water company, but no sewerage system. There are some 8 or 10 special cases of contamination in the village and a considerable number of places where cesspools are located so near the stream as to make contamination of it probable. The installation of a sewerage system and sewage disposal plant at this place is desirable.

Patterson is an unincorporated village of about 850 inhabitants, located some 38 miles above the inlet of the Croton water supply. There is no public water supply and no sewerage system in the village. The distance from the intake and the local condition make the installation of a sewerage system and sewage disposal works less urgent than in many of the other villages on the shed, but it would seem desirable that the installation of such a system and works be given consideration.

The village of Pawling, with its population of 1,000, about 100 of which are on the watershed of the Croton water supply, is located some 40 miles above the intake at Croton lake. There is a public water supply but no general sewerage system. Owing to the distance of this village from the intake the danger of contamination is not as great as from the villages near to Croton lake. In view, however, of the nature of some of the pollutions and the fact that a sewerage system and sewage disposal plant would be simple to provide, it would seem desirable that they be installed.

The village of Mt. Kisco, with a population of 4,000, is provided with a sewerage system and a sewage disposal works, consisting of settling tanks, contact beds, sand filters and a chlorination plant.

Yorktown Heights is an unincorporated village of some 400 inhabitants scattered over a considerable area. There is no water supply and no sewerage system. The conditions are such that the installation of a sewerage system and sewage disposal plant does not seem urgent at present, providing a careful supervision of the conditions is maintained by the city and the rules and regulations for the protection of the supply strictly enforced.

In general it may be said that sewerage systems and sewage disposal plants should be installed at Bedford Hills, Brewster and Katonah without delay; that at Carmel, Patterson and Pawling the installation of sewerage systems and sewage disposal plants is not so urgent and the conditions might be controlled by careful house to house inspections and the enforcement of the rules and regulations, and that at Yorktown Heights the installation of a sewerage system and sewage disposal plant is not urgent at present provided the rules and regulations for the protection of the water supply are strictly enforced.

In a report upon the supply dated December 8, 1921 the following recommendations with reference to the Croton and Catskill supplies were made:

1. That chlorination plants at Boiceville, Dunwoodie, Kensico (or Hillview), Old Central Park Reservoir, and at points on the Croton watershed where plants are now established, be continued in operation.
2. That pending results of special laboratory tests referred to below, the amounts of chlorine applied to the water at all chlorination plants shall be in such amounts as will give an excess of not less than 0.1 part per million as determined by the ortho-tolidin test, and be in amounts of never less than 0.2 parts per million.
3. That if found practicable to install the necessary apparatus, and to apply chlorine in the amounts stated above in Recommendation No. 2, without objectionable physical results, the point of application of chlorine be changed from Kensico to the outlet of Hillview reservoir; otherwise that it be retained at Kensico and the public excluded from the vicinity of Hillview reservoir by the establishment of a man-proof fence appropriately placed.
4. That man-proof fences be constructed around Williams Bridge reservoir, Jerome Park reservoir (except where stone wall exists), Old Central Park reservoir, High Bridge reservoir, Ridgewood reservoir,

Prospect reservoir and Clove reservoir, and otherwise such sanitary patrol established as will effectively prevent access of the public to these reservoirs.

5. That at the New Central Park reservoir a new fence, higher and less possible to scale, be constructed to take the place of the present old low fence; and if found practicable, to apply chlorine to the outlets of this reservoir in amounts not less than those stated in Recommendation No. 2; that chlorination plants be established at these outlets to treat all water leaving this reservoir, otherwise that the public be excluded entirely from the vicinity of this reservoir by a man-proof fence constructed at least 50 feet back from the edge of the reservoir.

6. That the public be excluded by means of properly constructed fences and patrol measures from the area surrounding the aerators below the Ashokan and Kensico dams.

7. That systems of sewerage and sewage disposal be installed without delay at Pine Hill, Phoenicia and Woodland on the Esopus creek and at Bedford Hills, Brewster and Katonah on the Croton watershed; and that at Carmel, Patterson and Yorktown Heights effective sanitary patrol and enforcement of rules and regulations be maintained to prevent so far as practicable the pollution of the Croton supply.

8. That laboratory tests be carried on at once at Dunwoodie and Kensico (or Hillview) and continued for a period of at least one year in order to establish a more intelligent, systematical and effectual control over application of chlorine to the water of the Catskill and Croton supplies.

9. That said tests shall include the following analyses of samples of both raw and chlorinated water covering the following determinations:

(a) Samples of raw water to be tested for turbidity, color, odors (including direct and secondary odors due to chlorine and microscopic organisms), albuminoid ammonia, Kjeldahl nitrogen, chlorine, oxygen consumed, dissolved oxygen, total counts of gelatin (two determinations), total counts on agar (two determinations), B. Coli (three dilutions using bile).

(b) Samples of treated water to be tested for counts on gelatin and agar, B. coli albuminoid ammonia, chlorine and Kjeldahl nitrogen of the raw water to which chlorine has been applied in the following percentage of complete absorption of organic matter, namely, 50 per cent, 75 per cent, 100 per cent and 125 per cent, using in each case four different periods of contact with chlorine, namely, 5 minutes, 15 minutes, 30 minutes and one hour.

10. That in performing these tests laboratory technique shall in general be in accordance with the "Standard Methods" except that green bile media may be used for the determination of B. coli as routine procedure if several tests are made in accordance with the "Standard Methods" to determine the relation between results from the two methods.

11. That if in the determination of free chlorine ortho-tolidin is used as an indicator there will also be used at intervals starch-iodide as an indicator in order to show the relative merits of these two indicators.

12. That at the chlorination plant at Boiceville chlorine gas be substituted for "bleach," and in order to accomplish a better and more uniform diffusion of the gas to the water, a low dam of watertight construction be constructed to concentrate the flow into a width of not over 40 feet to 50 feet with the chlorine applied at points of not over 5 feet apart across this restricted area.

13. That the Department of Water Supply, Gas and Electricity furnish, if convenient, the State Commissioner of Health and the U. S. Public Health Service, monthly or quarterly as may be desired, with the results of laboratory tests outlined above.

14. That if the above recommendations are promptly and effectively carried out that the U. S. Public Health Service issue favorable certificates to interstate carriers which use the Catskill and Croton supplies for drinking and culinary purposes.

NEW YORK CITY (Randall's Island — House of Refuge)

A special investigation of the water supply of the New York House of Refuge at Randall's Island, New York City, was made by Mr. W. C. Emigh, assistant engineer in this Department, on April 14, 1921.

Samples of the water supply collected in the past including those collected at the time of general investigations of the sanitary condition of the institution, have indicated the presence of some pollution in the supply. The recent special investigation was made in an effort to obtain further details of the institution water system and, if possible, to determine whether or not the pollution reached the supply subsequent to its entrance into the institution mains.

The water supply for the New York House of Refuge is furnished by the city of New York. A 10-inch connection extends from the city main on 119th Street under the East river to Randall's Island upon the southern portion of which the institution buildings are located. At a point on the grounds a short distance from the sea wall the main is deflected approximately at a right angle and continues southerly a short distance to a point from which two 4-inch mains extend in an easterly direction to the south wing of the main building. Both of the 4-inch mains extend from that point southerly to the power house, one outside of the wall of the main building and one within the building. These two 4-inch mains furnish the supply for the fire pumps at such times as it may be necessary to use the pumps. A third 4-inch line extends from the 10-inch main at a point near the first deflection easterly nearly to the Administration building from which point it branches in two directions. One branch extends in a northerly direction to the north wing of the main building in which are the officers' quarters. The second branch extends in a southerly direction to the power house through which it continues to the Primary building.

In addition to the connection with the city supply described a 10-inch main extends from 121st Street to the Children's Hospital which is located on the northerly portion of the Island. A connection exists between the water systems of the hospital and of the House of Refuge. This connection normally is closed by a valve and is reserved for emergency use only.

A fire supply is provided which is intended to be entirely separate from the service supply. For the fire supply three wood stave tanks are installed in the domes of the main building. The tank in the center dome has a capacity of 10,000 gallons, that in the northerly dome a capacity of 9,000 gallons and that in the southerly dome a capacity of 2,000 gallons. The last tank is out of repair and not in use. The principal main of the fire system extends in a northerly and southerly direction through the main building, the power house and the primary building. Risers extend from the horizontal main with hose connections on the several floors. These risers also extend to the tanks already described and serve as the source of supply for them.

A riser enters each of the tanks through the bottom and is fitted with a "T" just inside the tank. On the horizontal branch of the "T" is fitted a check valve which permits water to pass from the tank into the riser but prevents the flow of water through it into the tank. The riser continues vertically to an elevation somewhat below the top of the tank at which point it is fitted with a float valve through which the supply reaches the tanks. An overflow is provided from each tank leading to the roof of the building. The tanks are open and birds enter the domes in which they are located.

The main pipe line of the fire system enters the power house on the north side and continues through it to the primary building located on the south. In the power house there are two connections between the fire system and the service system of the institution each fitted with a check valve to prevent water passing from the former to the latter. As these are single check valves there was no convenient way for our engineer to test the tightness of the valves. There is always a possibility, however, in the use of check valves that they may not be entirely watertight.

In addition to the main connections there is in the power house a ¼-inch pipe extending from the fire system to the service supply. From this small pipe a connection extends a few inches to a pressure gauge. On each side of the gauge connection is a valve. Our engineer found that both of these valves were open. Upon closing the valve on the fire system side the gauge registered 20 pounds representing the pressure on the service side at that point. The valve on the service side was then closed and the one on the fire system side opened when the gauge registered 26 pounds.

It thus appears that at the time of the inspection the pressure was greater in the fire system than on the service system and that a flow of water from the former to the latter occurs through the small cross connection when both valves are open as was said to be the usual condition. It is to be noted that the pressure varies considerably during the hours of the day and night and that in some cases there is undoubtedly a flow in the opposite direction. At the time of the inspection the water level in the largest tank was about 10 inches below the apparent high water mark and in the tank located in the dome of the north wing, and farthest from the power house, the difference in the two levels was somewhat less. Although the ¼ inch pipe connecting the two systems under a 6-pound difference of pressure would admit of only a comparatively small flow, such flow would, in the course of a number of hours, aggregate a considerable quantity. While it is not possible to state definitely that any part of the pollution in the water evidenced by previous analyses has reached the system in this way it is within the range of possibility that such is the case.

In regard to the variation of pressure at separated points of approximately equal elevation throughout the buildings caused by the draught upon the line it was found that at approximately the same time the pressure in the toilet located in the main rotunda was 32 pounds and the pressure in the main kitchen was 20 pounds. It is thus evident that the sizes of pipes throughout the institution are such that a variation of draught caused a considerable fluctuation in pressure.

At the time of the investigation bacteriological samples of the service water supply at several points in the building, the fire supply from the open tank, and the New York City water supply at 119th street were collected and forwarded to the New York City branch of the Division of Laboratories and Research for analyses.

The bacteriological examinations of the seven samples collected during the years 1915 to 1920 inclusive have shown the presence of intestinal bacteria in 62 per cent of the 10 c.c., 14 per cent of the 1 c.c. and 19 per cent of the 1/10 c.c. inoculations. Examinations of the 5 samples collected at the time of the recent investigation all showed a low total count and the presence of intestinal bacteria in none of the inoculations. These last analyses point to no pollution of the supply at the time of sampling. It is to be noted, however, that occasional examinations of a water supply at infrequent intervals form a somewhat unsatisfactory basis upon which to judge the quality of the water. It would, therefore, be advisable that at least 4 times each year samples of this water be collected by the institution authorities or by a representative of this Department and that these samples be sent to the Division of Laboratories and Research for examination.

In a report dated May 17, 1921, the following recommendations were made:

1. That the small connection between the fire system and the service system upon which a pressure gauge is installed be removed.
2. That no connection be permitted to exist at any time between the two systems.
3. That samples of the water supply of the institution be collected at least 4 times each year and forwarded to the Division of Laboratories and Research for examination.

NEW YORK INTERURBAN WATER COMPANY

A reinspection of the public water supply furnished by the New York Interurban Water Company to the city of Mt. Vernon, and to the village of Mamaroneck, town of Harrison, and the districts of Orienta and Rye Neck, Westchester county, N. Y., was made by Mr. Alfred Mullikin, a representative of this Department on October 4, 1921. Previous inspections of this supply have been made by this Division in 1909, 1915 and 1920 and the reports thereon published in the Annual Reports of the Department for those years.

Mt. Vernon, a city with a present population estimated at 43,000 is located north and adjacent to New York City on the Bronx river. The village of Mamaroneck and the other districts served lie to the northeast of the city and have an estimated population of 9,000. Of the total population, all are served with water from the public water supply. The waterworks are owned and operated by the New York Interurban Water Company under the direction of Mr. H. E. Walbert, superintendent. The water supply of the New York Interurban Water Company is obtained from three sources namely, the Hutchinson river, Tom Paine brook and the Mamaroneck river. The supply from the Hutchinson river consists mainly of the overflow from the New Rochelle reservoirs together with the drainage from the watershed between these reservoirs and the reservoir of the Interurban Company at Pelham. The water from Tom Paine brook is collected in a large reservoir, known as the Mahlstead reservoir, from which it is siphoned to the Pelham reservoir. The water from these 2 sources is then filtered through open slow sand filters. The supply from the Mamaroneck river is collected in a small storage reservoir and then pumped through pressure mechanical filters after coagulation and sedimentation in a preliminary settling basin and after treatment with hypochlorite of lime. The description of these two filter plants will be found on pages 419 and 429, Vol. 2 of the 30th Annual Report of this Department.

After filtration and sterilization, the water passes into a distributing system. The water mains over the entire system are flushed once a year. The average daily water consumption for the month of September was 3,694,554 gallons, of which some 2,377,400 gallons was supplied by the Mamaroneck plant and 1,317,250 gallons by the Pelham plant. Storage is provided by a steel stand pipe.

The Mamaroneck reservoir formed by a timber and stone dam is located about 8 miles east of the center of the city of Mt. Vernon and about 1 mile north of the village of Mamaroneck. Signs are posted to prevent trespassing but the reservoir is not fenced. Monthly inspections are made and copper sulphate is added 3 or 4 times a year to inhibit the growth of algæ. Above the reservoir the drainage area of the Mamaroneck river is about 12.8 square miles. The soil is rocky and traversed by a number of highways along which are numerous houses on the watershed. The river receives surface wash from this populated area. It is also said that the supply is subject to direct pollution from time to time from the overflow of sewers carrying sewage from the city of White Plains. The Pelham reservoir is located about 1½ miles east of the center of the city of Mt. Vernon and north of the New York, New Haven and Hartford Railroad. Although signs against trespassing are posted, the reservoir is not fenced. The physical condition of the water was somewhat impaired at the time of the inspection due to the presence of algæ growths in the reservoir. Located near the inlet pipe leading from the reservoir to the slow sand filters, a barrel is placed and used in connection with the application of copper sulphate for treatment of the raw water at a rate of 5 pounds per day or approximately 0.46 parts per million. The Pelham reservoir is fed by water from the Hutchinson river and the Tom Paine brook. The Hutchinson river has a drainage area of about 2 square miles and receives the overflow from the New Rochelle reservoirs. There are also numerous houses and highways on this watershed which in all probability give rise to pollution of the supply. It was learned that the Hutchinson river receives direct pollution from leaks occurring in a tile sewer laid in Hutchinson boulevard. Tom Paine brook has a drainage area of about 1.9 square miles. The water is collected in two small riprapped ponds in the city of New Rochelle and flows to Mahlstead storage reservoir. The watershed receives less pollution than the other sources. It contains some swamp area above the upper pond and is open to the public. Above the upper pond crossing the brook in Wykagyl park, the city of New Rochelle has recently laid sewers constructed of 24-inch cast-iron pipe with leaded joints. The Mahlstead reservoir is rectangular in shape and riprapped. Although signs are posted prohibiting trespassing, 5 people were fishing from the banks of the reservoir at the time of the inspection. Although the reservoir is treated with copper suphate several times a year, the water contained considerable algæ. Rules and regulations for the sanitary protection of the public water supply of the city of Mt. Vernon were enacted by this Department in 1907.

The Pelham filter plant is located at the Pelham reservoir, 1 mile east of the city of Mt. Vernon and consists of 3 slow sand filters. With a consumption of 1.3 million gallons of water per day, the filters were operating at a rate of 1.16 million gallons per acre per day. The filters are cleaned about every 6 weeks, when ½-inch of sand is removed at each cleaning. Two of the filters were being cleaned at the time of the inspection. The filtered water is sterlized with liquid chlorine which is applied by a Wallace and Tiernan manual control solution feed chlorinator having a pulsometer capacity of 45 c.c. At the time of the inspection chlorine was being applied at the rate of 0.8 parts per million. An additional new chlorine apparatus has been installed, having a pulsometer capacity of 39 c.c. This apparatus is held in reserve.

The Mamaroneck filter plant is located about 1 mile north of the village of Mamaroneck and some 200 feet below the impounding Mamaroneck reservoir. The water from this reservoir flows by gravity to a coagulating basin. It is cleaned every three months. From the coagulating basin the water flows through 4 horizontal pressure mechanical filters. With a consumption of 2.38 million gallons of water, the rate of filtration based on a cross-sectional area of 160 square feet each, would be 162 million gallons per acre per day. Every day two of the four filters are washed giving a 48 hour run between washing for each filter. The first filtrate is not wasted. At the time of the inspection some 200 pounds of alum were being applied to the raw water per day, the rate of application is 0.59 grains per gallon which gave a satisfactory floc to the raw water.

The filtered water is sterilized with liquid chlorine at nearly 1.3 parts per million. From the recent inspection it appears that our previous recommendations have been carried out with the exception that the chlorine cylinder connections have not been arranged so that two cylinders may be kept connected to the apparatus at all times.

The results of the analyses of the filtered and chlorinated water made by the Division of Laboratories and Research and collected at the Pelham plant show nearly 100 per cent removal of turbidity, 50 per cent removal of color, 70 per cent and 53 per cent removal of organic matter as measured by the albuminoid ammonia and oxygen consumed tests respectively. The results of the bacteriological examination show a total bacterial increase of some 92 per cent as indicated by the 20 degree count which is probably due to the fact that one of the filters had just been cleaned prior to the time of the inspection. The results of the analyses of the filtered and chlorinated water collected at the Mamaroneck plant show nearly 100 per cent removal of turbidity, 58 per cent and 47 per cent removal of organic matter as measured by the albuminoid ammonia and oxygen consumed tests respectively. The results of the bacteriological examination show a total bacterial removal of 94 per cent as indicated by the 20 degree count and a removal of 100 per cent of organisms of the B. coli type in all inoculations examined.

In a report upon an inspection of the supply dated December 20, 1921, the following recommendations were made:

1. That as previously recommended the Interurban Water Company maintain at all times a careful supervision over the watersheds tributary to the supply.

2. That adequate pumping machinery be installed at the Westchester avenue sewage pumping station and care be taken to see that no sewers overflow or other sources of pollution continue.

3. That frequent tests of the treated water at both filter plants for excess chlorine be made by the starch iodide method in accordance with the enclosed directions, and the rate of application of the chlorine regulated in accordance with the results of these tests.

4. That the water company make careful daily tests of the raw and filtered water with a view to determining the exact quantity of alum and chlorine required at all times and the rate of application of these chemicals be regulated in accordance with the results of these tests and applied continuously.

5. That copper sulphate be properly applied to the Pelham and Mahlstead reservoirs throughout the year under the supervision of a competent expert in order to prevent the occurrence of algae growths in the reservoir.

6. That the present depth of sand on the Pelham filters be increased by the addition of a suitable quality of sand and at no time should the depth be less than 30 inches.

7. That the water company increase the filter capacity of the Mamaroneck filter plant in order that the rate of filtration will not at any time exceed 125,000,000 gallons per acre per day.

8. That the pressure gauges on the filters of the Mamaroneck plant be tested and the filters washed frequently in order that at no time may the loss of head exceed 10 feet, or a difference of 4 pounds on the gauges.

9. That in accordance with the previous report two chlorine cyclinders be attached to the chlorine apparatus at all times so that an interval of time will not elapse when gas is not applied to the filtered water when changing cylinders.

NIAGARA FALLS (Western New York Water Company)

An inspection of Niagara Falls public water supply was made by Mr. Earl Devendorf on June 6, 1921. Niagara Falls is a city of some 60,000 inhabitants located at the site of Niagara Falls on the Niagara river, and is a large manufacturing center. There are two public water supplies in the city. One, the municipal supply, owned by and operated under the direction of the city authorities, supplies approximately 80 per cent of the domestic population, and the other, owned and operated by the Western New York Water Company, supplies nearly all the large industrial plants in addition to about 20 per cent of the domestic consumption. The investigation of the former supply is covered in a separate memorandum.

The supply is derived from an intake canal of the Niagara Falls Power Company and the purification and pumping plants are located in the southern part of the city on the banks of the canal adjacent to the intake. The water is pumped after preliminary sterilization by liquid chlorine, from the intake well by a low lift centrifugal pump into the coagulating basin and flows by gravity through 14 mechanical gravity filters into a clear water well from which the water is pumped after secondary sterilization with liquid chlorine, by pressure pumps into the distribution system. The average daily consumption for 1920 was 9,788,000 gallons with a maximum of 10,431,677 gallons and a minimum of 7,974,614 gallons per 24 hours.

The conditions surrounding the supply were approximately the same as described in the former report and the detailed description of the purification plant and pumping station will not be given. The monthly average rate of application of sulphate of alumina for 1920 varied from .48 to 1.51 grains per gallon, depending upon the turbidity of the raw water. The monthly average rate of application of liquid chlorine for the year 1920 varied from 2.44 to 4.51 pounds per million gallons. In general approximately two-thirds of the amount of liquid chlorine used is applied before filtration and one-third after filtration. The results of the bacteriological examination of the filtered water before final chlorination show a 97.3 per cent reduction of the 37 degree bacterial count and a 91.7 per cent reduction in the presence of organisms of the B. Coli type. The results of the analysis of the sample of the filtered and treated water collected from a tap at the pumping station and from a tap at the railroad station show a removal of 100 per cent of turbidity and 40 per cent and 28 per cent removal of the organic matter as measured by the albuminoid ammonia and oxygen consumed, respectively. The bacterial reduction as measured by the 37 degree count was 99.9 per cent. There was a removal of 100 per cent of the organisms of the B. Coli type.

In a report on an inspection of the supply dated December 31, 1921, the following conclusions were made:

1. That the public water supply of Niagara Falls as supplied by the Western New York Water Company, was of a satisfactory sanitary quality at the time of the inspection.

2. That the Western New York Water Company have maintained careful supervision including daily laboratory control, of the purification plant to insure a water of safe sanitary quality to the consumers.

It was recommended:

That the Western New York Water Company continue their careful daily laboratory control of the operation of the purification plant in order that a water of safe sanitary quality may at all times be furnished to the consumers.

NIAGARA FALLS (Municipal Supply)

The municipal water supply is obtained from the Niagara river at a point about 2 miles north of the main portion of the city, through an intake extending some 2,200 feet from shore. There is also an emergency intake located some 300 feet from the shore which, however, has never as yet been used. The water is conducted by gravity; the pump well is located on the bank of the river from which it is forced by low lift pumps to the coagulating basin at the filter plant. The water flows by gravity through mechanical gravity filters to the clear water well located under the pumping station from which it is pumped by means of high-pressure pumps directly into the distribution system. The maximum daily consumption for 1920 was 15,520,000, while the average consumption amounts to approximately 10,000,000 gallons per day, the consumption having been cut down since the last inspection, due to the discovery and elimination of leaks.

At the time of the inspection it was learned that the plant is in practically the same condition as described in the former report and the methods of operation are also substantially the same. A detailed description, therefore, of the purification plant will not be again given. The average rates of filtration vary from 8 to 16 million gallons per 24 hours. The filter run is about 24 hours. The amount of alum applied in 1920 varied from .41 to 2.5 grains per gallon, depending upon the amount of turbidity in the raw water which varied from a maximum of 600 to a minimum of 3 and an average of 25. The amount of wash water varied from a minimum of 1.47 per cent to a maximum of 3.22 per cent and an average of 2.38 per cent of the water filtered. The rate of application of hypochlorite of lime varied from a maximum of 8.5 to 2.8, with an average of 4.25 pounds per million gallons. The results of the analyses of the treated water made by the Division of Laboratories and Research and collected from a tap on the public supply show a removal of 100 per cent of the turbidity, 31.7 per cent and 53.1 per cent of the organic matter, as measured by the albuminoid ammonia and oxygen consumed, respectively. The percentage of removal of bacteria of the B. coli type was 100 per cent.

In a report on an inspection of the municipal supply, dated December 31, 1921, the following conclusions were made:

> 1. That the public water supply of Niagara Falls, as supplied by the municipal plant, was of a satisfactory sanitary quality at the time of the inspection.
> 2. That the city authorities have maintained careful supervision, including daily laboratory control of the operation of the purification plant to insure a water of safe sanitary quality to the consumers.
> 3. That the daily water consumption has been cut down considerably, due to the discovery and elimination of leaks.

It was recommended:

> 1. That the city authorities continue their careful supervision, and laboratory control of the operation of the purification plant in order to insure a water of safe sanitary quality being delivered to the consumers at all times.
> 2. That the city authorities continue their endeavors to cut down the water consumption by the elimination of leaks and a house to house survey to discover and remedy service leaks.

NORTH CREEK

An investigation of the public water supply of the village of North Creek, Warren county, was made by Mr. Earl Devendorf, a representative of this Department, on May 31, 1921. A previous investigation of this supply was made in 1917 and a report thereon may be found in the annual report for that year.

North Creek is an unincorporated village, located in the northern part of Warren county on the Hudson river, some 58 miles northwest of Saratoga Springs. There is no public sewer system in the village although some 25 per cent of the houses are served by private sewers which discharge into the Hudson river. The remainder of the village is served by means of cesspools and privies. The population is approximately 500, of which approximately 50 per cent are served with the public water supply. The public water supply is owned and operated by the North Creek Water Works Company, of which Mrs. Gertrude Baker is owner and Mr. Thomas Alexander, superintendent. The main supply is derived from a small upland stream on which a reservoir has been constructed some 1½ miles northwest of the village. An auxiliary source of supply is a pond located in the southern part of the village. An auxiliary supply is obtained from a pond some 100 feet in diameter, having an average depth of approximately 4 feet. This pond is located in the southern part of the village along the main highway. The surface watershed tributary to the pond consists of practically only an acre of land. There are two houses located on the north and south sides of the pond, respectively. The privy at the south side of the pond has been moved to a point opposite the lower extremity of the pond so as to prevent the pollution of the pond supply. The pond supply is derived from a spring located on the south side of the pond, and when used in the past the pond supply has been depleted, indicating that the flow of the spring is not sufficient to supply the needs of the village.

Another source of supply has been derived in the past from a stream located about 1¼ miles southwest of the village. This supply was developed by the laying of some 6,000 feet of pipe from the brook to the village distributing system. The pipe was laid on the surface of the ground and was used during the summertime only. It was stated that this supply had failed during the summer of 1916. This supply, however, has not been used for the past three or four years and at present the pipe line has been disconnected. As another auxiliary source of supply an intake was located in the Hudson river at a point near the upper end of the village and the water pumped by means of a steam pump, operated by steam derived from a locomotive placed at this point by the railroad company. At the time of the inspection the pumping equipment had been removed and the authorities stated that no water had been pumped from this source for the past three or four years.

The watershed tributary to the main supply is about 1½ square miles in area and consists of wholly uninhabited woodland. The land above the reservoir is used as a pasture. There are no permanent sources of pollution upon this watershed. The watershed of the auxiliary brook supply southwest of the village is approximately 2 square miles in area and consists entirely of wooded land. A mountain road is located parallel with the brook and is used for carrying supplies to a fire warden's station located on top of the mountain. There are no permanent sources of pollution on this watershed. The Hudson river above the village of North Creek has a watershed of many square miles, on which are located several hamlets and a large summer population from visitors and campers. It is subject to both direct and indirect pollution from visitors as well as the inhabitants on the watershed and cannot, therefore, be considered as a safe source of supply without adequate purification. As a result of this inspection it appears that conditions remain about the same as at the time of the former inspection except that the Hudson river and the brook southwest of the village have not been used for the past four years.

In a report on an inspection of the supply dated August 22, 1921, the following recommendations were made:

1. That the North Creek Water Company, as previously pointed out, take steps to properly protect the sanitary quality of the main source of supply by making frequent inspections of the watershed in order to discover and eliminate any possible source of pollution.
2. That the spring pond supply should be discontinued as an auxiliary source of supply unless steps are taken to prevent the possible pollution by the construction of adequate drainage ditches to divert surface wash, by the construction of a fence and the proper placarding of the area around the pond to prevent the inhabitants and passers-by from coming in the vicinity of the pond.
3. That the Hudson river be abandoned as an auxiliary source of supply without adequate purification.
4. That if the brook located southwest of the village be retained as an auxiliary source of supply, the waterworks company should make frequent inspections of the watershed to discover and eliminate any possible source of pollution.
5. That if the above sources of supply be insufficient to furnish the required amount of water or if the plans outlined prove impracticable, the waterworks company should take steps to develop a new supply from other sources which should be free from all possible sources of pollution.

NORTHPORT

A reinspection of the public water supply of the village of Northport, Suffolk county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on June 22, 1920. A previous inspection of this supply was made by this Division in the year 1916, and report thereon published in the Annual Report of the Department for that year.

Northport is located in the town of Huntington on the Wading River branch of the Long Island Railroad about 42 miles from New York City. The population in winter amounts to about 2,500 and in summer to about 3,500. Of the total population all are served with water from the public water supply. The waterworks are owned and operated by the Northport Waterworks Company, of which Mr. E. L. Phillipps, 50 Church street, New York City, is president. The water supply is derived from 4 driven wells located about ¾ of a mile south of the village, 2 miles northwest of the railway depot and some 200 feet from the south shore of Northport harbor. From the wells water is delivered by pumping into a circular concrete storage reservoir located near the south edge of the village about ¾ of a mile northeast of the plant. This reservoir supplies the low level district. From this reservoir water is pumped into air pressure tanks located nearby which supply the upper part of the village. The storage reservoir is uncovered. The average daily water consumption in winter is approximately 190,000 gallons or 76 gallons per capita, and in summer approximately 250,000 gallons or 71½ gallons per capita. Since the last previous inspection changes to the supply have been made in the following particulars: A new pump house has been constructed in the vicinity of the wells at a somewhat lower elevation than the old steam plant and is some 200 feet west of the old plant, which is located alongside and east of a spring fed pond. The pipe which formerly connected this pond to the water supply has been completely disconnected. Near this pumping plant 2 new wells have been driven.

The two new wells are 6 inches in diameter and 43 feet deep. These wells are provided with concrete boxes about 5 feet square. They are not flowing wells. The suction mains are directly connected to the newly constructed pumping machinery. The 2 old wells are flowing wells. They are located just south of the old steam pumping plant on the east edge of the pond. Opportunity for pollution of the ground water was noticed only in the vicinity of the new wells. About 100 feet southwest of the new wells is an open vault privy 3 feet deep. This privy is cleaned yearly. It is used by the pump attendant who lives in a house about 75 feet south of the new pumping plant. There are no other houses nearby. In the vicinity of the 2 old wells and spring fed pond, no direct sources of pollution were noticed. The pond and old wells are surrounded by a fence to prevent trespassing. The new wells are not. The pumps are alternately operated 10 hours a day. The plant was installed in 1919, and is maintained in very good condition. About ¾ of a mile north of these plants and alongside of the concrete reservoir is the high level pumping unit. The public water supply is cross-connected with the auxiliary fire supply of the Northport Waterworks Company at the electric power station located at Woodbine avenue near Scudder avenue. The well is located near the boiler room of the electric plant which is in a thickly populated district. There appears to be no direct sources of pollution. If necessary the supply can be turned into the village system.

In a report on an inspection of the supply dated January 18, 1921, the following recommendations were made:

1. That the authorities in charge of the water supply remove the source of pollution within the vicinity of the wells by providing a watertight removal container for the privy and properly removing and disposing of the contents of this container at a remote point in a satisfactory manner.
2. That the area in the vicinity of the new wells be fenced off to prevent trespassing.
3. That the company continue to analyze the water at frequent intervals to detect the presence of any active contamination which may occur at any time and should such contamination be found present at any time, steps be immediately taken to discover and remove the sources of pollution if possible or to properly sterilize the water supply.

NORTHVILLE

An investigation of the public water supply of the village of Northville, Fulton county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on May 24, 1921. Previous investigations of this supply were made in 1916 and 1918 and the reports thereon may be found in the Annual Reports of the Department for the respective years.

Northville is an incorporated village located in the northern part of Fulton county, some 17 miles north of Gloversville, on the Sacandaga river. There is no public system of sewers and the inhabitants in the village are mainly served by privies and cesspools. The permanent population amounts to some 1,200 inhabitants, of which practically all are served with the public water supply. During the summer the population is increased to some 1,500 by summer visitors. The water supply is owned by the village and is operated under a board of trustees, of which Mr. Scott Partridge is president. The supply is derived from an impounding reservoir on Steenburg creek, located about 2 miles northeast of the village.

The reservoir has a surface area of approximately 5 acres. The reservoir is formed by the construction of an earthen dam having a masonry core wall. The dam has been provided with 2 waste weirs. From the intake the water flows to the village. The land surrounding the reservoir is owned by the village and enclosed with a fence. The watershed of Steenburg creek above the reservoir has an area of approximately 3½ square miles, which is uncultivated. The area is sparsely inhabited, there being 3 houses on it having a total population of approximately 10 people. The houses are, for the most part, located at considerable distance from the stream. At the Horton place, about ½ mile above the reservoir, it was found that no one was living on the farm. It was learned that the farm house is used as a camp. The privy has been moved to a point directly in the rear as was recommended in a former report. As a result of the recent inspection it was found that the conditions on the watershed have changed to some extent. One house on the watershed has been abandoned entirely and another was burned. At the time of the inspection it was learned that a pipe line is laid underneath the highway bridge crossing the Sacandaga river to the Sacandaga Park side of the river. This pipe line is used in time of emergency to supply Sacandaga park with water from the Northville public water supply or to supply Northville with the Sacandaga public water supply.

In a report on an inspection of the supply dated June 21, 1921, the following recommendations were made:

1. That the authorities in charge of the public water supply continue to carefully supervise the sanitary conditions on the watershed in order that any insanitary conditions may be discovered and eliminated.
2. That, should the Horton place be again occupied, the privy be moved to the western side of the house, as previously recommended.
3. That, if any difficulty is experienced in carrying out the above recommendations, the village authorities should apply to this Department for the enactment of rules and regulations for the sanitary protection of the public water supply.

NORWICH

A reinspection of the public water supply of the city of Norwich, Chenango county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on December 9, 1920, accompanied by Mr. C. F. Ames, superintendent of the water company. A previous inspection of this supply was made by this Division in 1908 and the report thereon published in the annual report of the Department for that year.

Norwich is located on the Chenango river in the northwestern part of the town of Norwich, 53 miles southwest of Utica. The present population is 8,300 of whom all are served by the public supply. The waterworks are owned and operated by the Norwich Water Works Company of which Mr. Robert E. Eaton is president. The water supply is derived from Ransford creek, the 2 tributaries of which rise about 4 miles northeast of the city and which have been impounded in two reservoirs located about 2 miles northeast of the city. In times of low flow, water is drawn from Chenango lake located

5½ miles northwest of the city. As an emergency supply water is pumped from the Chenango river. The water from the above sources is chlorinated and filtered through 6 horizontal mechanical pressure filters, installed by the New York Continental Jewel Filtration Company. The water after filtration flows by gravity through a distributing system consisting of 20 miles of cast-iron pipe. The average daily water consumption is 2,000,000 gallons. The city has a sewerage system, the sewage being discharged without treatment into the Chenango river.

Ransford creek, above the point at which the water is impounded, has a drainage area of approximately 3¼ square miles. The watershed is hilly with a gravel and hardpan subsoil and is devoted to farming and pasturing. About 15 per cent of the shed is forested. There are 20 houses on the area served by privies having metal containers which are removed and their contents disposed of at regular intervals by the Water Company. A detailed inspection of the watershed is made twice each year. At the lower end of the creek an open canal has been constructed to by-pass the drainage of 5 farms to a point in Ransford creek below the intake. Chenango lake, the area of which is 0.19 square miles, has a drainage area of 0.86 square miles. The lake is a summer resort and has 1 hotel and 15 cottages. It is used as a source of supply without treatment by these summer residents. The method of disposal of the sewage at the hotel and cottages is chemical closets which have been installed and are maintained by the water company. The intake is located at the northwestern end of the lake where there are no dwellings. From the lake there extends 400 feet of 16-inch pipe to a tunnel through which the water runs for 1,000 feet. Beyond this tunnel the water flows through 1½ miles of pipe discharging into a deep gorge. The water continues flowing in this open stream to the reservoir. This stream is the westerly of the 2 tributaries of Ransford creek from which water is taken in times of high flow. The water company now owns the rights to the entire lake. Ice is cut from the lake each year to supply the cottages in summer, some ice being cut by nearby farmers. Each spring 45 pounds of copper sulphate are applied to each reservoir. Last August the lower reservoir was drained and thoroughly cleaned.

As the city grows it is contemplated developing Gilmore brook as a source of supply. The drainage area of this stream above the proposed intake is 6 square miles.

The filtration plant is located near the east side of the Chenango river. The filters are washed by reverse flow at 5 A. M. each day. With a daily consumption of 2,000,000 gallons per day and using 6 filters the rate of flow is 90,000,000 gallons per acre per day. The coagulant used is aluminum sulphate at a rate of 0.44 grains per gallon. For sterilization, chloride of lime is added, the amount varying from 11 to 26 pounds per day, or with a consumption of 2,000,000 gallons per day this would mean a rate of application of chlorine of from 0.23 to 0.53 p.p.m. The results of the analysis of the filtered water made by the Division of Laboratories and Research, show a total bacterial removal of 99.5 per cent. The absence of B. coli in all of the inoculations show that the filtered water was free from active contamination at the time the inspection was made.

In a report on an inspection of the supply dated March 4, 1921, the following conclusions were made:

1. That the water supply was of a fairly satisfactory sanitary quality at the time of the inspection.
2. That the authorities in charge of the water supply are exercising careful supervision over the watershed.
3. That the filters are apparently being operated in an effective manner.

It was, therefore, recommended: That the authorities continue their careful supervision over the sanitary condition of the watershed and the operation of the purification plant.

OAKFIELD

A reinspection of the public water supply of the village of Oakfield, Genesee county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on March 18, 1921. A previous inspection of the supply was made by this Division in the year 1917, and a report thereon published in the Annual Report of this Department for that year. Oakfield is located about 6 miles north of Batavia. The present population is estimated at 1,500. Of the total population 50 per cent are served with water from the public supply, the remaining population obtaining water from private wells. The waterworks are owned and operated by the municipality under the direction of a board of trustees, of which Mr. C. H. Griffin is president. The water supply is derived from Seymour spring located about ¼ of a mile west of the village railroad station, situated 300 feet south of Drake street and about 400 feet east of the corporate limits of the village. From the spring the water is delivered by pumping through a distributing system consisting of 4 miles of pipe. A steel tank is located in the northwestern part of the village, supported on a steel tower. The average daily water consumption based on a consumption of 80 gallons per capita amounts to 60,000 gallons. This amount is considerably increased during the summer when canning factories draw heavily on the village supply. In general, the details of the waterworks system remain as described in the previous report. The spring is covered over by a small collecting reservoir. The walls of this spring are of concrete and rest on a limestone foundation from which the water is obtained. The roof of the collecting reservoir is also the floor of the pumping station. It is water tight and was in a satisfactory condition at the time of the inspection. An overflow pipe extends from the west wall to a nearby creek. This pipe was placed too near the floor level, and until an additional opening was made in the wall below the pipe, water from the spring flowed upon the pump room floor. The new overflow opening has been roughly cut in the concrete wall and a continual flow of water discharges below the overflow pipe into the creek. A privy owned by the village is located about 150 feet west of the plant at a lower elevation. This privy is very rarely used by the pump attendant but is occasionally visited by trespassers. It is not maintained in a sanitary condition. To the south wall of the pump room is attached a Wallace-Tiernan solution feed manual control apparatus. At the time of the inspection chlorine was not being applied to the water on account of a stoppage in the rubber tubing which leads from the solution jar to the suction main. The chlorine apparatus, aside from the stoppage in the tubing, is in very good condition. From the recent inspection it appears that the previous recommendations have not been carried out, with the exception that extra chlorine has been obtained.

In a report on an inspection of the supply dated April 18, 1921, the following recommendations were made:

1. That the opening in the west wall of the collecting basin be closed, and a properly designed overflow constructed if necessary to care for the surplus water.
2. That the chlorine apparatus be repaired and that chlorine be applied to the water continuously at such a rate as may be found necessary to properly sterilize it, but never at a rate of less than 0.2 r.p.m.
3. That the test for excess chlorine in the treated water be made daily in accordance with the instructions issued by this Department to determine the proper amount of chlorine to apply to the water, and that scales be provided for weighing the chlorine cylinders to check the rate of application of chlorine.

OLD FORGE

A reinspection of the public water supply of the village of Old Forge with special reference to the installation of the department chlorination apparatus was made by Mr. Earl Devendorf, a representative of this Department, on August 25 and 26, 1921. Previous inspections of this supply have been made by this Division in 1918 and 1919, the reports on which may be found in the Annual Reports of the Department for the respective years.

Old Forge is an incorporated village located in the town of Webb in the central part of Herkimer county. The resident population of the village is approximately 750, which is increased however during the summer months to some 3,000. The water supply is owned by the village and operated under the direction of a board of trustees, of which Mr. Walter Marks is president. The water supply is obtained from springs and spring brooks on a mountain side some two miles northwest of the village. The water is collected in two impounding reservoirs formed by the construction of dams across natural depressions, which have capacities of 160,000 and 175,000 gallons. The water flows from these reservoirs to the village distributing system by gravity, crossing the north branch of the Moose river. The daily water consumption is unknown but varies greatly with the season of the year and is said to be steadily increasing, due to the addition of summer homes.

The recent inspection was made as a result of word received in the Department about the middle of August that the regular public water supply of the village of Old Forge had been depleted, due to the long continued drought and to the heavy demands from the large summer population, and that it would be necessary to augment the regular supply by pumping water from the north branch of the Moose river. The president of the village and the health officer were immediately advised that this Department did not consider the water of the Moose river safe for human consumption without treatment, as the rivér drains an extensive watershed on which there are numerous summer resorts. Although the river flows for a long distance above the intake through a wooded and unpopulated region, there is the attendant danger of pollution of this supply of an accidental, incidental or willful nature by fishermen and trespassers. It was accordingly arranged to have a representative of this Department install the Department emergency chlorination apparatus to sterilize the water from the river before being pumped into the mains. This apparatus was installed on August 26 and the operator instructed in the use of the apparatus and the making of the starch iodide determination for excess chlorine in the treated water, by which method the rate of application of chlorine was regulated. The emergency pumping station was located on the north branch of the Moose river at a point where the main from the reservoir crosses the river and some 2 miles in the woods and away from any highway. It was therefore necessary to carry the apparatus to the pumping station where it was installed and the chlorine applied to the water through the suction line of the pump. As estimated from the speed of the pump, chlorine was being applied at the rate of approximately .53 parts per million.

In our previous reports it has been recommended that the village authorities take all the necessary precautions to maintain the supply in a safe and sanitary condition at all times, erecting suitable fences around the springs and reservoirs and posting the area to prohibit trespassing and keeping the reservoir, springs and channels as free as possible from decayed vegetable matter. It was further recommended that the village authorities secure an additional source of water supply of satisfactory sanitary quality as soon as possible. From the recent inspection it appears that the village authorities have endeavored to maintain the supply in a satisfactory sanitary manner although the physical quality of the supply is affected by the high color and turbidity, resulting from the large amount of timber and decayed vegetation in the lower reservoir.

Since the last previous inspection the village authorities have purchased the necessary land and at the time of the inspection were engaged in the construction of a covered concrete reservoir on the top of a hill near the village. At the base of the hill the village authorities were engaged in developing a well supply and had partly dug a basin and were waiting to obtain a well driller. This work was being developed under the direction of Mr. Weller, village engineer. It is understood that plans have not been submitted to the Water Power Commission for approval, as required by law. From a study of the local geological conditions, as observed at the time of the inspection and from a study of the United States topographical sheet for this section, it would appear very unlikely that any sufficient supply of water could be obtained from a well in this locality. The information obtained by our representative at a later date, when he visited the village to obtain the department chlorination apparatus, would appear to verify this statement as it was said that the village, after drilling to a considerable extent and encountering only rock, had abandoned the attempt to develop a well at this point. Before any further attempt is made by the village to develop an auxiliary supply, plans should first be submitted to and receive the approval of the Water Power Commission, as required by law.

In a report upon the supply dated December 31, 1921, the following recommendations were made:

1. That the village authorities endeavor to maintain the present supply in a safe and sanitary condition at all times.
2. That the village authorities at the earliest possible time and before proceeding any further, submit the proposed plans, for augmenting their present supply, to the Water Power Commission for approval in accordance with provisions of chapter 499 of the Laws of 1921.
3. That in case it again be necessary to pump from the north branch of the Moose river, the village authorities should notify this Department immediately and make suitable arrangements for sterilizing the supply by means of liquid chlorine.
4. That the village authorities clean the reservoirs, springs and channels of timber and decayed vegetation in order to improve the physical quality of the water, as well as erect fences and post signs to prevent trespassing in the vicinity and prevent any possible pollution of the reservoir.

OLEAN

A reinspection of the public water supply of the city of Olean, Cattaraugus county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on April 18, 1921. Previous reinspections of this supply were made by this Division in the years 1909, 1912, 1915, 1917 and 1919, and reports thereon published in the annual report of the Department for those years. The present population of the city is estimated at 20,000, of which 90 per cent or more is served with water from the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners, of which Mr. J. B. Gage is president and Wm. Sheehan, superintendent. Mr. Frank Sherburne is in charge of the filter plant.

The water supply is derived from two sources: The first source is old wells located in the southern part of the village; the second, Olean creek, located in the northern part of the village. The water from the wells is used without treatment, but the supply from Olean creek is filtered and chlorinated before entering the distribution system. Two reservoirs are located on a hill in the southern part of the village. The average daily water consumption is approximately 2½ million gallons or 139 gallons per capita, of which one million gallons were being derived from the well supply. There are 15 driven wells located at the foot of South Union street on the northern bank of the Allegany river. The depth to the water in the wells, it is claimed, when the pumps are not operating is 5 feet from the ground surface and 19 feet when the pumps are operating. Each well is provided with a concrete box and cover. The wells are cross-connected to each other by pipe which intersects two suction lines which cross the bed of the river entering a large dug well known as the Cook well. From this well the water flows to the pumping machinery. An automatic chlorine feed apparatus was installed in 1920 but was not connected for use at the time of the inspection.

The new supply is derived from Olean creek in the northern part of the city, a short distance below the Erie railway bridge. From the intake the raw water is pumped to a sedimentation basin from whence it flows into mixing chambers, then to coagulation basins, and then through gravity mechanical filters, after which it is chlorinated and enters the clear water reservoirs. From the clear water reservoir the water is pumped into the city distribution system. Olean creek, above the intake, has a watershed area of about 170 square miles. Most of this area is devoted to agriculture, with the exception of two villages — Franklinville, of over 2,000 population, and Cuba, of over 1,600 population, located 15 or more miles upstream. Franklinville has a sewerage system and disposal plant and disposes of its sewage by broad irrigation. Cuba has no comprehensive sewerage system. Rules and regulations were enacted by this Department January 29, 1919, to protect the supply from pollution to within a distance of 10 miles above the intake. Yearly inspections are made by the city authorities to see that the provisions of these rules are properly carried out.

The new filtration plant was fully described in our report dated November 11, 1919.

Chlorine is applied to the filtered water through a Wallace & Tiernan automatic solution-fed chlorinator at a rate of 0.25 parts per million. The amount of chlorine on hand was two cylinders. Scales are provided for checking the weight of the chlorine. A duplicate apparatus has been provided but is not assembled. A fully equipped laboratory is located in the southwestern part of the building. Tests for turbidity, color, alkalinity, bacterial counts on litmus lactose agar and presumptive tests for B. coli are made daily in the laboratory; tests for excess chlorine by the ortho-tolidin method are also made. From the recent inspection it appears that previous recommendations have been carried out, with the exception that the well supply is not continually chlorinated.

The water supply is cross-connected to and used by the Erie railroad, Pennsylvania railroad and the Vacuum Oil Co., and also used by the P. S. & N. railroad and a private consumer, who distributes the water to a number of private houses. The Erie railroad has a dug well 10 feet in diameter and 30 feet deep, located in the northern part of the village, north of their railroad tracks, a short distance east of the Pennsylvania railroad crossing. This well is constructed with heavy masonry and provided with a loose wooden plank cover. It is not well protected from surface wash, being located on the side slope near the highway. This supply is cross-connected to the village supply, but the village water is only used when the gas engine is unable to pump from the Erie well. The connection is made at a nearby water tank and no check valve is provided. It is alleged that this well is not used for drinking purposes and that drinking water for the railway coaches is obtained at other villages.

The Buffalo and Allegheny Division of the Pennsylvania railroad has a 6-inch driven well located in their yard in the western part of the village. Water is pumped from a 400 foot depth. The P. S. & N. railroad is not provided with separate wells but obtains its water from the village water supply. The Vacuum Oil Company has three separate connections with the village supply, all of which, it is claimed, are provided with double check valves. It is not likely that water from the auxiliary connections would reach the city supply on account of the high city water pressure, but it is possible that under some conditions this might occur.

In a report on an inspection of the supply dated May 20, 1921, the following recommendations were made:

1. That in cases where auxiliary supplies not under the jurisdiction of the city are cross-connected to the city supply, the city authorities

install double check valves to prevent possibility of contamination of the city supply.

2. That the city well supply be properly chlorinated at all times in order to guard against possible pollution.

3. That the city authorities continue their careful and efficient operation of the filter plant.

ONEIDA

An investigation of the public water supply of the city of Oneida, was made by Mr. Earl Devendorf, assistant engineer of this Department, on December 3, 1920. A previous investigation of the public water supply was made in 1911 and a report thereon may be found in the Annual Report of the State Department of Health for the year 1912.

The city of Oneida has a population of approximately 10,000 inhabitants and is located on Oneida creek in the northern part of Madison county, 20 miles west of Utica.

The water supply is owned by the city and operated under a board of water commissioners, of which Mr. William M. Baker is president. The water supply is derived by gravity from a small stream, on which two impounding reservoirs are located some 2 miles south of the city. Approximately 65 per cent of the residents are furnished with the public water supply. The consumption is estimated to vary from 400,000 to 1,000,000 gallons per 24 hours, corresponding to a daily per capita rate of 40 gallons to 100 gallons. The industrial consumption is unknown. The largest industrial user is the Burt Olney Canning Company, whose factory is operated only from June to November. The watershed has an area of 2 square miles which consists mostly of pasture and wooded land having steep hillsides. There are some 16 farmhouses located on the watershed, which, together with the highway traversing the watershed on either side of the valley, constitute the chief sources of contamination. There is apparently no direct discharge of household waste into the stream. The supply is, however, subject to contamination from the fertilized fields and pasture land bordering the stream as well as the accidental, incidental or wilful contamination from visitors or trespassers upon the watershed. Some trouble has been experienced from algae growths in the reservoir. This is said to have been eliminated by the use of copper sulphate.

At the time of the recent inspection it was ascertained that there are apparently no opportunities for direct contamination existing on the watershed. No treatment plant for softening or purifying the supply, as previously recommended, has been built. The authorities in charge of the public water supply were considering the possibility of procuring a new supply by the construction of a reservoir and intake works upon Florence creek, some 22 miles north of the city of Oneida. The proposed site of the reservoir is said to be in the vicinity of the reservoir developed by the city of Rome on Fish creek and is separated only by a hill dividing the two watersheds. It is understood that the Sherrill-Kenwood water district would combine with the city of Oneida and help defray the expense of developing this new supply. There is a cross-connection at the Dodge Pulley Works between an auxiliary supply used for fire purposes and the public water mains. The cross-connection consists of double check and gate valves constructed in a pit and is apparently satisfactorily protected. The auxiliary supply is said to consist of a well. The National Casket Company wells, 125 feet in depth and 6 inches in diameter, have been drilled and are provided with casings extending to the bottom of the wells. At each factory cross-connections exist which consist of a single check and gate valves connecting the auxiliary supply with the public water mains. During the past year the well at the south factory of the National Casket Company was used as an auxiliary source of supply for 6 weeks, during a period of shortage in the source of the main public water supply. This well is located in the city and the ground water sources from which the water is derived are subject to pollution from the thickly populated section. The only protection which this ground water has against pollution from these numerous sources is the natural purification afforded by passage through the soil. The results of the analyses of the sample recently collected from this well indicate that such purification was not being obtained and that water from this well was of an unsatisfactory sanitary quality.

In a report on an inspection of the supply dated January 26, 1921, the following conclusions were made:

1. That the public water supply of the city of Oneida is very hard and is subject to contamination from a sparsely populated watershed and from pasture land as well as from accidental, incidental or wilful contamination from trespassers on the watershed.
2. That there are several cross-connections existing between the city water main and private well supplies which are unsatisfactory in that they are provided with single check and gate valves.
3. That during the period of recent drought the well at the south factory of the National Casket Company factory was pumped directly into the city mains to augment the main public water supply and this water apparently is not of a satisfactory sanitary quality.
4. That the city of Oneida, together with the Sherill-Kenwood water district, is considering the matter of acquiring a new source of public water supply from Florence creek.

It was therefore, recommended:

1. That, providing the present supply is retained, the authorities in charge of the public water supply of Oneida, in accordance with the recommendations formerly made by this Department, make careful and regular inspections of the watershed in order to discover any sources of pollution, and if such sources are discovered, take immediate steps to eliminate them and, furthermore, consider the installation of a softening and mechanical filter plant and that pending the installation of such a plant a chlorination plant for the sterilization of the public water supply be immediately installed and put in operation.
2. That the present cross-connections between the city mains and any auxiliary supplies be removed or provided with double check and gate valves, in accordance with the plans approved by this Department, a blue print of which is attached to this report.
3. That, due to the unsatisfactory location and unsatisfactory sanitary quality as indicated by the recent analysis, no water from the well at the south factory of the National Casket Company factory be pumped into the public mains without adequate sterilization with liquid chlorine.
4. That the authorities in charge of the public water supply secure the service of a competent engineer to make a thorough study of the feasibility of carrying out the proposed plan of securing a supply from Florence creek.

ONEONTA

A reinspection of the public water supply of the city of Oneonta, Otsego county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on February 25, 1921. A previous inspection of this supply was made by this Division in the year 1909 and the report published in the annual report of the Department for that year.

Oneonta is located 82 miles southwest of the city of Albany. The present population is estimated at 11,000, all of whom are served with water from the public supply, in addition to 1,000 people outside of the city limits. The waterworks are owned and operated by the Oneonta Water Company, under the direction of Mr. George I. Wilbur, president. The water supply is derived from 2 impounding reservoirs, the upper one of which is 4¾ miles north of the center of the city, and the lower 3 miles north of the center of the city. There are 2 main pipe lines which deliver the water by gravity to pressure filters located in the northern part of the city, from whence it is delivered through the distributing system. The average daily water consumption is 2,000,000 gallons or 167 gallons per capita. Since the last previous inspection a few changes have been made in the system. The pumping building has been enlarged by making extensions on the east side. A new room was constructed in 1914 for chemical purposes. In the same year the use of alum pots was discontinued and a solution feed system installed. A coal bin and storage room was built in 1920. The authorities are overhauling the filter plant and have already replaced the old laterals and strainers in 4 of the filters with new ones. It is intended to overhaul 1 filter unit each year.

The upper reservoir covers an area of about 75 acres. The reservoir has been treated to prevent the growth of algæ. Fishing in the reservoir is not allowed. Ice is cut during the cold season. Signs are posted near the reservoir to call attention to trespassers that polluting the water is prohibited. There is no fence surrounding the reservoir to prevent trespassing. Inspections of the watershed area and reservoir are made monthly. Some 800 or 900 acres of land above the reservoir are controlled by the water company. There are 24 occupied and about 10 empty houses on the shed. The company has adopted the policy of purchasing all farms possible. The farms now under their control are not inhabited. The privies on the farms are mostly provided with concrete vaults and receive proper care. The lower reservoir covers an area of from 20 to 25 acres. This reservoir is cleaned when found necessary. Its source of supply is springs and brooks. No fishing is allowed nor are horses permitted on the ice during the winter ice cutting. Both reservoirs are located in a well-developed farming district traversed by numerous highways and are subject to considerable pollution from surface wash.

The filter plant is located at the northern edge of the city and is used also as a residence for the plant operator. There are 6 horizontal New York Continental-Jewel filters connected in parallel. They are washed daily. Alum is applied by pumping at a rate of .5 to 1 grain per gallon and at the time averaged .6 grains per gallon. The hypochlorite of lime is applied at the rate of 6 pounds per million gallons or .25 part of available chlorine per million parts of water. The water is used on the D. & H. R. R. for drinking purposes and for boiler use. The supply is cross-connected with the railroad supply which is pumped from the Susquehanna river. One connecting main has a single check valve in the pipe line, which was installed before instructions on valves from this Department were received.

In a report on inspection of the public water supply, dated April 1, 1921, the following recommendations were made:

1. That the company continue its careful supervision over the watershed to detect and eliminate as far as possible all sources of pollution.
2. That the authorities in charge of the water supply sever all connections between their system and the system of the railroad company or provide such connections with double check valves in accordance with the general plan approved by this Department.

OTEGO

A reinspection of the public water supply of the village of Otego was made on December 14, 1920, by Mr. A. I. Howd, assistant engineer in this Department, a previous inspection of this supply having been made by the Department in 1914. Otego is an incorporated village, located in the southwestern part of Otsego county, about 8 miles southwest of Oneonta. The village is also located on the Susquehanna river and Otsdawa creek. The water supply is owned by the village and is under the direction of a board of water commissioners, of which Mr. A. D. Annable is president. The water supply is derived from springs and Otsdawa creek about 2 miles north of the village. Practically all of the population of the villag estimated to be about 500, is served with water from the public wate supply. There are about 4 miles of mains. There is no way of accuratel estimating the domestic water consumption.

The springs, one of the sources of the public water supply, are locate at the foot of a precipitous bank near the west branch of Otsdawa cree and consist simply of small shallow basins which are connected by pip lines to the reservoir. The springs are provided with wooden covers whic are old and in poor condition. The west branch of Otsdawa creek, th other source of water supply, has a watershed area of about 6.7 squar miles above the intake. There are about 40 houses on the watershe The reservoir is constructed of concrete and has a gabled roof over i The water from the creek flows into the upper section of the reservoir an the spring water flows into the lower section. The pipe line to the villag originates in the lower section of the reservoir and the spring water i therefore, ordinarily used. An automatic float, located in this part of th reservoir, opens a valve when the water reaches a certain low level an allows the creek water from the upper section to flow into the lower sectio and unite with the spring water.

The inspection of a portion of the watershed was made after a heav rain. Otsdawa creek was swollen considerably above its normal size an was very turbid and highly colored from the red soil on the shed. Th runoff from the highway, which traverses the watershed, flowed in stream down the steep slopes of the shed into the creek.

In a report on an inspection of the supply, dated February 9, 1921, th following conclusions have been made:

> 1. That the previous recommendations made by this Department fo the improvement of the public water supply of the village of Otego hav not been carried out.
> 2. That the springs, one of the sources of supply, are subject to surface wash and are not properly protected.
> 3. That the west branch of Otsdawa creek (the other source of supply) receives the drainage from pastures, barnyards and manured field and is subject to serious contamination by drainage from privies an by inhabitants of the watershed.
> 4. That the results of analyses of the public water supply indicat that the water is of unsatisfactory sanitary quality and not fit fo domestic consumption.
> 5. That the typhoid fever case rate for the village of Otego is considerably higher than the case rate for the State.

It was recommended:

> 1. That the village authorities take immediate action to secure a adequate water supply of safe sanitary quality and employ a competent sanitary engineer to advise them in this matter.
> 2. That if the springs are to be retained as a source of supply they be properly protected by drainage ditches and provided with concrete curbs and tight padlocked covers.
> 3. That if the west branch of Otsdawa creek is to be retained as a source of water supply, all sources of possible pollution on the watershed be removed and the water subjected to purification before it is delivered into the mains.

PALMYRA

A reinspection of the public water supply of the village of Palmyra, together with a number of proposed auxiliary sources of supply, was made by Mr. Earl Devendorf, representative of this Division, on September 14 and 15, 1921. Previous inspections of this supply have been made by this Division in 1909, 1910, 1913, 1915 and 1919, and the reports thereon published in the Annual Reports of the Department for the respective years.

Palmyra is an incorporated village having a present population estimated at 2,500 and is located in the southwestern part of Wayne county, about 25 miles east of Rochester. Of the total population practically two-thirds are served with the public water supply. The waterworks are owned and operated by the village under the direction of a board of trustees, of which Mr. H. E. Williams is president. The main source of water supply is obtained from a dug well in the southwestern part of the village, known as the Upper Station well, and an auxiliary supply is available from another dug well about 1½ miles east of the village, known as the Lower Station well. The water consumption is estimated at about 80,000 gallons per day. The water is pumped from the well to an iron standpipe 20 feet in diameter and 50 feet in height, located on a hill above the upper well and has a capacity of approximately 118,000 gallons. From the standpipe the water flows by gravity throughout the village. In general the details of the waterworks system remain as described in the previous report.

The recent inspection was made at the request of the village officials, desiring aid in the sterilization of an auxiliary supply being pumped from the well at the Garlock packing plant in the village, as the village supply had become depleted due to the continued excessive drought. From the recent inspection it appears that the previous recommendations of this Department have not been acted upon and that the conditions surrounding the supply were approximately as described in the former reports. At the time of the inspection the small stream passing in the vicinity of the lower well was dry and the ground water tributary to the well supply was not therefore at the time of the inspection subject to any opportunity for pollution from this source. With the return of normal flow in the stream, however, this freedom from pollution from the infiltration of the polluted creek water will not continue and the supply should not be used under any circumstances unless it is first effectively sterilized by means of liquid chlorine.

The village authorities resorted to the use of the Garlock well on September 7, 1921, and were on the average pumping by means of a fire engine for three hours a day. At the time of the inspection the pump was not in operation, as the tractor used in operating the pump had been changed and the tractor in use was not of sufficient horse power to operate the pump. The use of the Garlock well was continued until approximately October 8th. Up to the time of the inspection the authorities in charge of the public water supply had been in the practice of dissolving six ounces of hypochlorite of lime in the well and allowing it to stand until the following day, when the pump would be started again. It was pointed out, however, by the engineer at the time of the inspection that this method of sterilization was very inefficient and probably had little effect, as the sterilized supply remaining in the well from the night before would probably be removed in a very short time by the pump which was delivering water through two fire streams to a nearby hydrant. While the capacity of the pump is not known it probably has a minimum capacity of at least 150 gallons per minute which for three hours of operation would give a minmum average daily discharge of some 25,000 gallons. At the time of the inspection the engineer supervised the erection of a barrel over the well in which a hypochlorite of lime solution was to be prepared and allowed to flow through a rubber garden hose into the well at a point near the pump section. Directions and materials were left for testing for an excess of chlorine by means of starch iodide and for varying the amount of hypochlorite of lime in accordance with the results of the tests. The village officials later advised the Department that they had used ½ pound of chloride of lime to 30,000 gallons of water, giving an estimated rate of application of hypochlorite of lime of 0.66 parts per million. The need for the sterilization of the well was apparent from the result of the inspection as the well is located in the vicinity of a thickly populated community and the ground water surface tributary to the well is receiving pollution from sewer leakage as well as from surface wash in the area in the vicinity of the well, as there is no curbing or cover provided for the well and the ground around the well is not graded nor drainage ditches provided to divert surface wash from the vicinity of the well. The use of such a source of water supply by the village subject to such a crude and inefficient method of purification is attended with grave danger and the village authorities should develop at the earliest possible moment an auxiliary source of water supply which shall be both adequate in quantity and of a safe sanitary quality in order that it may not be again necessary to resort to the use of this well.

At the time of the inspection the Beltey spring, a proposed source of water supply, was investigated. This spring is located about 1½ miles east of the village, at the foot of a ravine between two hills used as pasture land. The flow from the spring was very roughly estimated at 15,000 gallons per day. As there had been no rains in the immediate past and the people residing in the vicinity stated that the flow of the spring never failed, it is probable that this flow represents the minimum available flow from the spring. A small spring pond is impounded at one side of the ravine in which, at the time of the inspection, a large number of geese and ducks were swimming about. A sample of water, however, was collected from the spring above the pond. The springs have not been developed nor protected in any manner and the area about the springs was open to cattle in the pasture. It was stated at the time of the inspection that the spring is not located at sufficient elevation to enable the water to be used by gravity but would necessitate pumping. Before the springs could be used as a source of public water supply it would be necessary for the village to purchase or control the area around and above the spring and protect the spring by the construction of drainage ditches and embankments to divert surface wash and enclose a sufficient area around the spring with a tight fence to exclude cattle and other animals from coming in the vicinity of the spring and causing any possible pollution.

Another source of supply investigated at the time of the inspection was the McNutt springs which are located about two miles south of the village. This supply consists of the flow from the low area and from several springs which have been tiled and piped to the milk house located some 300 feet below the main highway above which the house and barns of the farm are located. At the time of the inspection approximately 1 inch of water was flowing over a concrete weir 1 foot wide giving an estimated flow at the time of the inspection of 27,300 gallons per day. It would be necessary for the village to acquire or control the area above the springs in order that there might be no opportunity for pollution of this supply before it could be used as a source of public water supply. The authorities in charge of the supply stated that from the results of a rough survey made there was a possibility that this supply might be used by gravity. Of the two proposed auxiliary sources of water supply examined, the McNutt spring would appear to be the more desirable. Before any auxiliary supply, however, is developed the village authorities should secure the services of a competent sanitary engineer to investigate and advise them as to the most desirable source or the best and most economical means of developing an auxiliary supply of water.

In a report upon an inspection of the supply dated December 6, 1921, the following recommendations were made:

1. That as previously recommended the village of Palmyra install immediately a liquid chlorine apparatus for sterilizing the water of both the lower and upper wells in order to ensure a water of safe sanitary quality at all times.
2. That the village authorities secure the services of a competent sanitary engineer to make a detailed investigation of the matter of securing a new source of supply and advise the village as to the necessary procedure and best and most economical method of developing an auxiliary source of supply in accordance with the recommendations enclosed in the body of the report above.
3. That the village authorities abandon the use of the badly polluted Garlock well and under no circumstances use this well as a source of public water supply unless some permanent and effective means of sterilizing the water are provided.

PENN YAN

An investigation of the public water supply of Penn Yan was made by Mr. Earl Devendorf, assistant engineer in this Department, on December 9, 1920. A previous investigation of the public water supply was made in 1916 and a report thereon may be found in the Annual Report of the Department for that year.

Penn Yan is a village having a population of approximately 5,000 inhabitants and is located in the central part of Yates county, at the northern end of Keuka lake, 15 miles southwest of Geneva. The village is served by a comprehensive sewerage system which discharges through a sewage disposal plant into the outlet of Keuka lake. The water supply is owned by the village and operated under the supervision of a municipal board, of which Mr. Fred H. Linn is president. The supply is derived by pumping from Keuka lake at a point about 1½ miles southwest of the village. The water is pumped into the distribution system, the excess over consumption going to an open stone masonry distributing reservoir. Approximately 95 per cent of the population is served with the public water supply. The average daily amount of water pumped for the year 1919 as estimated from the pump strokes was 570,748 gallons or 114 gallons per capita. Of the above amount of water pumped there are several large consumers, the most important of which are the New York Central Railroad, the Pennsylvania Railroad, Yates County Canning factory, the Tempter Fruit and Corn Products company and the Garret company. Keuka lake has a watershed, 187 square miles and for the most part is sparsely inhabited. The principal sources of pollution in the immediate vicinity of the intake, are the summer cottages located along the shores of the lake, of which there are a considerable number. The watershed is protected by rules and regulations enacted by this Department and the village employs an inspector during the summer season to control the watershed. While the majority of the privies along the lake are said to be provided with watertight containers, complaint was received from a resident in the village concerning the pollution of the lake in the vicinity of the water supply intake, and the engineer interviewed the residents who stated that during the summer vacation season there were many violations of the water rules leading to the pollution of the water supply in the vicinity of the intake. There are three cross-connections with the city mains. Each connection is of 8-inch pipe and provided with a single gate and check valve located in a manhole and provided with a cast-iron cover.

In a report on an inspection of the supply dated January 20, 1921, the following recommendations were made:

1. That the village authorities provide the most careful continuous supervision of the watershed in order that any insanitary conditions thereon may be discovered and eliminated.
2. That the present cross-connections of the public water mains with auxiliary fire supplies be either entirely separated or provided with double check and gate valves, in accordance with the plans approved by this Department.
3. That, as previously recommended, the village authorities immediately install a chlorination apparatus and treat the water continuously with a proper amount of liquid chlorine in order to guarantee a public water supply of satisfactory sanitary quality at all times.

PERRY

A reinspection of the public water supply of the village of Perry, Wyoming county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department on December 17, 1920. A previous inspection of the supply was made by this Division in the year 1913 and the report thereon published in the Annual Report of the Department for that year.

Perry is located in the eastern part of Wyoming county about 30 miles southwest of the city of Rochester. The present population is estimated at 5,000, practically all of whom are served with water from the public supply. The waterworks are owned and operated by the municipality under the direction of a board of trustees of which Mr. W. S. Sanford is president. The water supply is derived from Silver lake pumped to slow sand filters and then repumped from a clear water well into the distribution system.

Since the previous inspection a slow sand filter, an individual meter valve house, a clear water reservoir and a number of pumps have been added to the waterworks system.

Silver lake, from which the water supply is derived, is approximately 3 miles long and about ½ mile wide. The waters of the lake are subject to considerable pollution from the summer population on its shores. No sewerage system has been constructed to take care of the sewage from the settlements around the lake. The authorities in charge of the water supply make annual inspections of the watershed to detect possible sources of pollution of the lake. Ice is cut from the lake about 200 feet north of the intake of the water supply.

The new filter plant which was constructed in 1917, consists of a slow sand filter of three units, having a total area of about ⅛ of an acre. The filter is provided with a concrete roof. It is operated at an average rate of 1,970,000 gallons per acre per day. Sand is raked every two months and cleaned every two years. The filters were provided with loss of head gauges which were out of operation at the time of the inspection. The clear water reservoir is 80 feet in diameter and 6 feet deep, having a capacity of 300,000 gallons. It is constructed of concrete and covered and provided with manholes and manhole covers.

In a report dated February 5, 1921 on an inspection of the supply the following conclusions were drawn:

1. That the water supply at the time of the inspection was of a relatively satisfactory sanitary quality.
2. That the authorities in charge of the water supply have carried out the previous recommendations of this Department in that the board of trustees have applied for the amendment of rules and regulations for the protection from contamination of the public water supply, although these rules have not been enacted; that the village board of health has engaged a man to keep a strict oversight and report on the sanitary conditions of the watershed as found in the violation of the rules and regulations, and that a purification plant has been properly designed and constructed and is operating in a fairly efficient manner.
3. That, with the present method of sewage disposal, namely, cesspools and privies in the lake district, it is possible that the storm drainage from this district may at times carry considerable pollution into the lake water.

It was therefore recommended:

1. That the authorities continue to maintain careful supervision over the watershed in the vicinity of the lake at all times so that the danger of contamination of the supply may be reduced to a minimum.
2. That the authorities endeavor to increase the efficiency of the filter plant and put in order all of the appurtenances which were not in operation at the time of the inspection.
3. That, if it is found impossible or impracticable to secure a higher degree of purification, the village authorities consider the installation and operation of a chlorination apparatus.
4. That a blow-off valve and waste water pipe be constructed at the clear water well.
5. That the village authorities again attempt to secure the installation of a sewerage system in the lake district in accordance with plans approved by this Department.

PHILADELPHIA

A reinspection of the public water supply of the village of Philadelphia, Jefferson county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on April 14, 1921. A previous inspection of the supply was made by this Division in the year 1918 and the report thereon published on page 283 of the 40th Annual Report of the Department.

Philadelphia is located on the Indian river in the central part of the town of Philadelphia, 17 miles northeast of the city of Watertown. The present population is 850, practically all of whom are served by the public supply. There were also a few farm houses outside of the incorporated village limits that received water from the public supply. The waterworks are owned by the village and are under the control of a board of water commissioners, of which Mr. W. J. Guthrie is president. The water is derived from a spring fed reservoir located 5 miles south of the village from which it flows by gravity through 8 miles of mains. There is no public sewerage system, about three-quarters of the population being served by private sewers which discharge directly into the Indian river, the remaining houses being served by local cesspools and privies. About 8 acres of land around the reservoir are owned by the village, this territory being enclosed by a 5-foot wire mesh fence. The watershed above the springs is level, uninhabited land, and having a sandy subsoil. The reservoir is cleaned once a year, while the watershed is regularly inspected a few times each year.

In a report on an inspection of the supply dated January 29, 1921, it was recommended that the authorities in charge of the supply continue to maintain strict supervision over the area around the basin to prevent trespassing and pasturing and keep the fence in repair and the area in satisfactory sanitary condition.

PHILMONT

A reinspection of the public water supply of the village of Philmont, Columbia county, N. Y., was made by a representative of this Division on October 24, 1921. Previous investigations of this supply have been made by this Division in 1912, 1918 and 1919 and reports thereon published in the Annual Reports of the Department for those years.

The village of Philmont is located about 30 miles southeast of Albany. The population of the village is about 2,200 practically all of which is served with the public water supply. The waterworks are owned by the municipality and operated under the direction of the board of water commissioners. The water supply is derived from Forest lake which is located about 4 miles south of the village at an elevation of some 500 feet above the village. The water supply flows by gravity from the lake to a stone lined distributing reservoir and is thence delivered by gravity to the village. The average daily consumption amounts to approximately 70,000 gallons, about ½ of which is used by the mills in the village. The water supply is protected by rules and regulations enacted by this Department in 1913. There is no comprehensive public sewer system in the village. The recent inspection disclosed that in general the details of the waterworks remain as described in the previous reports with the exception that a rough filter which acts as a strainer has been constructed to treat some swamp water which formerly flowed directly into Forest lake. The officials still allow parties, who have first obtained consent of the board of water commissioners, to fish in the lake. As previously pointed out this practice cannot be given approval by this Department as the opportunity for pollution of the supply is ever present. At the time of the inspection cattle were observed grazing on land adjacent to and sloping toward the lake on the opposite side from the outlet. The village owns a 50-foot strip of land between the lake and the point where the cattle are grazing.

In a report on an investigation of the supply dated November 22, 1921, the following recommendations were made:

1. That the authorities in charge of the public water supply carry out such of the previous recommendations of this Department as have not already been acted upon.
2. That pending the acquisition of land to prevent the use of this land for agricultural and grazing purposes, and the 50 foot strip now owned by the village reforested with evergreen trees.
3. That as previously recommended, if the present practice of allowing fishermen to enter the reservoir is maintained, the authorities should install and operate apparatus for the sterilization of the public water supply with liquid chlorine.
4. That the authorities in charge of the public water supply continue a careful sanitary patrol of the watershed in order to discover and eliminate any sources of contamination that may be found to exist on the shed.

PLATTSBURG

A reinspection of the public water supply of the city of Plattsburg, Clinton county, N. Y., was made by an assistant engineer from this Department on June 14, 1921. Previous inspections of the supply were made by this Department in 1911, 1912, 1914, 1916, 1919, and 1920, reports upon which will be found in the Annual Reports of this Department for the respective years. Rules and regulations for the protection of the supply from contamination were enacted in 1900.

Plattsburgh has a population estimated at 10,909. The waterworks are owned and operated by the city under the direction of a superintendent of public works. Practically all the population is served with the public supply. Water is also furnished to the Hotel Champlain at Bluff Point and to the Plattsburg Barracks where it is reported the water is passed through a filtration plant before being used. The water supply is derived by gravity from one or both of two brooks located on the easterly slopes of the Dannemora mountain about 7 miles west of the village. Storage is provided by the two reservoirs on the West Brook watershed having a combined capacity of 150,000,000 gallons, and increased storage is being provided by the reconstruction of the dam and deepening of the old reservoir at Mead Pond. The water is delivered through two parallel lines of 12-inch pipe which extend from the source of supply to two 1½ million gallon reservoirs near the city. Here they are interconnected but continue on into the city. The average daily water consumption is over 3,200,000 gallons per day or almost 300 gallons per capita. In general the details of the waterworks system remain as described in the previous report, the principal exception being that Scribner pond is reported out of use and the old Mead pond above it is being prepared for use and that liquid chlorine apparatus has been purchased and is in operation.

A heated chlorination building has been provided about 500 feet below the lower of the two reservoirs on the West Brook watershed. This building is equipped with a 12 by 6-inch Venturi meter and a liquid chlorine apparatus adjusted to feed 0.4 of a part per million of liquid chlorine to the water passing through the meter. Four or five spare cylinders of liquid chlorine are provided and an entire duplicate apparatus is on hand with a duplicate set of parts for both apparatus. A portable emergency apparatus has also been procured.

From our recent inspection it apears that the chlorination plant for sterilizing the water taken from West and Mead brooks has been purchased but it is alleged that on account of unsuitable pressure for automatic operation it has been felt necessary by the city authorities to install chlorine apparatus at two points. The apparatus has been installed at only one of these points, namely on West brook which is reported as the only one in use.

Here a chlorination plant has been installed and provided with a suitable meter for measuring the flow and applying chlorine at all times in such proportions as to effectively sterilize the water when properly operated. The old pond on Mead brook is being cleaned and the use of Scribner pond as a reservoir temporarily discontinued. However, the tests of water and reduction in algae and aquatic growths leave much to be desired and there are many flats, particularly in the larger, or upper used reservoir, on the West brook which should be filled in or excavated and the banks steepened.

In a report upon the supply dated July 5, 1921, the following recommendations were made:

1. That metering and chlorination of all the water be continued in such proportions as to properly sterilize it as determined by frequent starch iodide tests and bacteriological examinations.
2. That no use be made of Scribner pond but the work on the old upper pond on Mead brook be completed as soon as possible and the flow from this reservoir be metered and chlorinated.
3. That connections and provision be made at once to treat near the source any emergency or additional supply which may be required from points other than West brook.
4. That the reservoirs be cleared, as far as possible, of aquatic growths.
5. That copper sulphate be used each year prior to the time algae first appears and at such intervals as may be necessary to eliminate such growths.

A supplementary reinspection of the public water supply of the city of Plattsburg, Clinton county, N. Y., was made by Mr. Earl Devendorf, a representative of this Department, on July 28 and August 9, 1921.

An inspection of this supply was previously made on June 14, 1921, and in the report on this inspection under date of July 5, 1921, it was pointed out that no means had been provided for the sterilization of the Mead brook supply. As a result of the unfavorable analyses of samples of water collected at the time of the inspection the surgeon-general of the United States Public Health Service prohibited the use of water from the public water supply of the city of Plattsburg for drinking and culinary purposes on cars used in interstate traffic. The commandant at the Plattsburg barracks furthermore had forbidden the use of the water without treatment for drinking or culinary purposes by the men at the barracks and had requested the city authorities to take steps to improve the water supply.

The recent inspection was made at the request of the city officials of Plattsburg for advice concerning the procedure to be followed in providing a supply of satisfactory sanitary quality. The representative of this Department assisted the city authorities in installing and gave instructions for the operation of the emergency chlorination plant on the Mead brook supply and supervised the sterilization of the distributing reservoir.

At the present time all of the water being used by the city of Plattsburg is being sterilized by means of 2 chlorination plants. An automatic control, venturi operated, Wallace and Tiernan chlorination plant is sterilizing the West brook supply, and a manual control Wallace and Tiernan chlorination plant is being used to sterilize the Mead brook supply.

As a result of the recommendations made at the time of the inspection the city officials have engaged the services of a consulting engineer to advise them on the matter of permanent improvements to the public water supply, involving the construction of additional storage reservoirs, improvements to the present distributing reservoirs and the permanent installation of chlorination plants on the Mead brook as well as the West brook supply.

The results of the analyses of samples of water collected at the time of the last inspection indicate that the sterilization of the supply was being carried on in an effective manner, and that the public water supply was of a satisfactory sanitary quality.

In a report upon the supply, dated September 8, 1921, the following recommendations were made:

1. That the city authorities continue to maintain careful supervision over the operation of the chlorination plants in order that the supply may at all times be effectively sterilized.

2. That the city authorities endeavor to carry out the previous recommendations of this Department as soon as possible, the detailed procedure of which will be given by the consulting engineer employed by the city.

RANDOLPH

An investigation of the public water supply of the village of Randolph Cattaraugus county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on March 31, 1921. Previous investigations of this supply have been made in 1911 and 1915 and reports covering the results of these inspections may be found in the annual reports of the Department for those years.

Randolph is an incorporated village, located in the southwestern part of Cattaraugus county, some 16 miles east of Jamestown. The village has no public sewer system and is served for the most part by privies and cesspools. The population is approximately 1,300, practically all of whom are served by the public water supply. The public water supply is owned by the village and operated under a board of water commissioners, of which Mr. W. L. Rathbone is superintendent. The supply is derived from 2 reservoirs located about 2 miles southwest of the village. The old reservoir impounds the water from the springs and flowing wells, whereas the new reservoir impounds the water from a small stream draining the narrow valley above. The consumption amounts to approximately 300,000 gallons per day. The largest consumers are the Borden Mill factory, which uses approximately 100,000 gallons per day; the Randolph furniture factory which uses about 30,000 gallons per day; and the Electric Light Company's plant which uses some 40,000 gallons per day. The reservoirs are located at the mouth of a narrow ravine which is drained by a small stream. It was stated, however, that there is only one family living upon this watershed and that there are no permanent sources of pollution existing on the watershed. It was furthermore stated that during approximately 75 per cent of the year the stream did not exist above the point where the springs are located. This area is owned by the village and fenced and posted against trespassing. The flow from several springs and wells, located above the reservoirs, is collected and led through a pipe line which extends into the main leading to the village. There is a pipe connecting the two reservoirs and when the flow from the springs and wells is not equal to the demand of the village, water from a reservoir fed by the small stream will enter the spring fed reservoir, since the intake is placed in the spring fed reservoir.

During the past winter the village authorities have dug a new well some 19 feet in depth at a point approximately 25 feet above the old reservoir This well is approximately 12 feet square and the well has not been enclosed with walls. In addition to this dug well 3 2-inch and 1 4-inch drilled wells all 20 feet in depth, have been dug at various locations above and near the old reservoir. These wells were, at the time of the inspection, flowing and discharging into the spring reservoir. In addition to the above improvements the village authorities have engaged the services of an engineer to make a study of the development of an additional source of water supply from a spring flow at a point some 2 miles east of the village of Randolph near the point where the village of East Randolph derives its public water supply. It is proposed in fact to use as a part of the supply the waste water used to run the small Pelton wheel in the East Randolph pumping station. The plan provides for pumping the water to the proposed reservoir, from which it is to be fed to the village distribution system by gravity. The proposed reservoir is to be located at approximately the same elevation as the present reservoir and on a hill some 2½ miles east of the village. The proposed reservoir is to be approximately 200x250 feet in plan and to hold about ½ million gallons.

In a report on an inspection of the supply, dated June 18, 1921, the following recommendations were made:

1. That the village authorities complete the development of the new wells at the earliest possible time in order that it may not be necessary to use the brook water.
2. That in case the new wells do not constitute a sufficient supply, an additional supply be obtained by the development of the proposed plans prepared by the engineer.
3. That in developing the new source of supply precautions be taken in order to prevent possible pollution.
4. That, pending the completion of the above improvements, the new reservoir impounding the surface water be used for emergency only, and after completion of the improvements, the use of the brook supply be discontinued.

RAQUETTE LAKE

A reinspection of the public water supply of Raquette lake was made by Mr. Earl Devendorf, a representative of this Division, on August 26, 1921. A previous inspection of this supply was made by this Division in 1918 and the report thereon published in the Annual Report of the Department for that year.

Raquette lake is an unincorporated summer resort located in the western part of Hamilton county at the southern end of Raquette lake. Sewage in the community is collected in a septic tank, the effluent from which is discharged into the lake below the village. The resident population of the village amounts to some 100 inhabitants. During the summer months, however, this is increased to approximately 300, 75 per cent of which are served with the public water supply. The waterworks are owned and operated by the Raquette Lake Railroad Company, of which Mr. D. Dager is superintendent. The water supply is derived from a spring-fed brook about 1½ miles south of the railroad station and on which a small reservoir has been formed by the construction of an earthen dam. From the reservoir water is delivered by gravity through a distribution system consisting of two miles of mains. In general the details of the waterworks system remain as described in the previous report. The reservoir has been increased in area and depth, due to the work of beavers in raising the dam originally constructed by the railroad company. This has flooded an area covered with timber and vegetation and has a tendency to increase the vegetable organic matter in the water. The watershed draining into the reservoir and brook is small in area and consists of marshy and wooded land in the State forest reserve and is remote from any habitation. As a result of the recent inspection it appears that the railroad company has not extended the intake as recommended in the previous report, and due to the activity of the beavers the area and depth of the reservoir have been increased, flooding a considerable additional amount of vegetation. As a result of this the water appeared to be highly colored.

In a report on an inspection of the supply dated October 17, 1921, the following recommendations were made:

1. That as previously recommended, the railroad company extend the intake or maintain the reservoir free from vegetation in order that the aesthetic quality of the water may be improved.
2. That the railroad company make frequent inspections of the supply in order to prevent any contamination of the public supply.

RENSSELAER

An inspection of the public water supply of Rensselaer was made by Mr. W. J. Erickson of this Division on April 26, 1921. The pumping station was inspected and it was found that conditions remained the same as described in the report on the inspection of 1920. The filter plant was not in operation as the filters were only operated at night. This is due to the fact that a lower rate for power is then obtained. The electrically driven pumps are used and the steam power plant is held in reserve. Daily presumptive tests for B. coli and for excess chlorine are made. Weekly chemical analyses are made by Mr. James Caird, chemist, of Troy.

RICHFIELD SPRINGS

An investigation of the public water supply of the village of Richfield Springs, Otsego county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on May 12, 1921. Previous investigations of this supply have been made by the Engineering Division in 1908, 1916, 1918 and 1919. The reports thereon may be found in the Annual Reports of the Department for the respective years.

Richfield Springs is an incorporated village located in the northern part of Otsego county, at the northern end of the Canadarago lake. The resident population is approximately 1,600, which is increased to 3,000 during the summer months by visitors. The village is served with a public sewer system which discharges into the lake. The water supply is owned by the village and operated under a board of water commissioners, of which Mr. H. E. Schooley is president. The supply is derived by pumping from Allen lake to two distributing reservoirs located one-half mile east of the village, from which point it is delivered to the distributing system in the village, after passing through two pressure mechanical filters. The consumption is estimated to vary from 60,000 gallons to over 475,000 gallons per 24 hours. The water in the distributing reservoirs was low at the time of the inspection, due to the fact that the operator at the pumping station located at Allen lake was absent on account of illness. The area surrounding the distributing reservoirs is fenced to prevent trespassers or animals from coming in the vicinity of the reservoir, and drainage ditches have been constructed around the easterly and southerly sides of the reservoirs to prevent surface wash from entering the public supply.

The superintendent stated that no alum is being used in connection with the operation of the filters, and the alum tanks which were formerly used have been disconnected. The filters are washed daily with raw water by reversing the flow through the filters. After washing the first filtrate is allowed to waste until it becomes clear. The filters are two Hyatt pressure mechanical filters. The village authorities have, in conjunction with the underwriters' association, endeavored to make available, at times of fire, a sufficient supply by the installation of an electrically operated valve on the main opposite the filter plant which will allow the filters to be by-passed.

In a report on an inspection of the supply dated July 21, 1921, the following conclusions were made:

> 1. That the village officials in charge of the public water supply have carried out in part our former recommendations by eliminating the cutting of ice on the reservoirs, as well as the cutting of grass with horses on the land surrounding the reservoirs.
>
> 2. That the filtration plant is not being properly operated, inasmuch as no alum or other coagulant is applied, and the rate of filtration is at times of maximum consumption in excess of the rate at which such filters are commonly operated to afford satisfactory purification.
>
> 3. That the installation of a by-pass on the line leading from the distributing reservoir to the village distributing system, by which the filter plant is cut out of service at times of fire, constitutes a menace

to the purity of the supply, inasmuch as when used it will allow the entrance of raw unpurified water into the village mains.

4. That the village authorities are at the present time engaged in the construction of a gravity line from Allen lake to the distributing reservoirs.

It was, therefore, recommended:

1. That the village authorities in charge of the public water supply continue as in the past to effectively safeguard the sanitary quality of the water, by making frequent inspections of the watershed of Allen lake in order to discover and eliminate any possible sources of pollution that may be found to exist on the watershed.
2. That the use of the by-pass at the filter plant be discontinued, and that instead the village authorities enlarge the present filter plant, in order to provide sufficient quantity of water during times of maximum consumption and at times of fire.
3. That, pending the remodelling of the filter plant, a chlorination plant be installed and the water sterilized at all times.
4. That, as previously recommended, the village authorities engage a competent sanitary engineer to aid them in carrying out the above recommendations.

RIPLEY

An inspection of Ripley public water supply was made by Mr. Earl Devendorf, a representative of this Division, on June 8, 1921. Ripley is an unincorporated village located in the northwest corner of Chautauqua county, near Lake Erie, some 65 miles southwest of Buffalo. The population is approximately 1,000 inhabitants, all of which are furnished with the public water supply. The water supply is owned and controlled by the Ripley Water Supply Company, of which Mr. F. M. Randall is president. The supply is derived from the north fork of Twenty-Mile creek, at a point about 2 miles southeast of the village, where a dam has been constructed. The supply is stored in reservoirs on both the north and east forks of the streams, from which points it is led by gravity to a covered distributing reservoir. From this distributing reservoir the water flows by gravity to the village.

The conditions surrounding the supply were practically the same as described in the former report, which recommended that the company make every effort to correct any insanitary conditions on the watershed, applying to this Department for the enactment of rules and regulations for the sanitary protection of the shed if any difficulty should be encountered in correcting any insanitary conditions, and that purification of the supply should be provided by filtration or sterilization with liquid chlorine, or possibly both. The recent inspection discloses that the water company has not provided any treatment for the supply. The cover of the distributing reservoir was partially broken and badly in need of repair.

In a memorandum on an inspection of the supply dated December 31, 1921, the following conclusions were made:

1. That the water company have not carried out the former recommendations made by this Department by providing for the filtration or chlorination of the supply.
2. That the roof of the distributing reservoir was in poor repair.

It was recommended:

That the water company continue their careful supervision of the sanitary conditions on the watershed, in order to discover and remove any possible sources of pollution that may be found to exist on the shed, and that they give further consideration to the previous recommendations of this Department for providing filtration or chlorination of the supply, and that they repair the roof of the distributing reservoir.

ROME

A reinspection of the public water supply of the city of Rome was made by Mr. A. I. Howd of this Division on July 19, 1921. Previous inspections of this supply were made by the Department in 1911, 1915 and 1918 and the reports thereon published in the 33rd, 36th and 39th Annual Reports of the Department respectively.

The city of Rome, having a population of about 26,400, is located in the central part of Oneida county about 15 miles northwest of Utica. Of the total population practically all are served with the public water supply. The waterworks are owned and operated by the municipality under the direction of a board of water commissioners of which Mr. Ray Armstrong is superintendent.

The water supply is derived from the east branch of Fish creek about 12 miles northwest of the city. The water from the creek is conducted through a pipe line to a storage and distributing reservoir located about 5½ miles north of the city and a small concrete building containing two chlorinators and a recording apparatus for a Venturi meter is located about ½ mile below the reservoir. The water is delivered to the city by gravity. The daily water consumption ranges from 5.5 to 12 million gallons, the average being about 8 million gallons of which about 3 million gallons are used for commercial purposes. The average daily water consumption for 1920 was 8.5 million gallons or about 320 gallons per capita per day. In general the details of the waterworks system remain as described in the last previous report.

In a report upon a reinspection of the public water supply dated November 19, 1921 the following conclusions were drawn:

1. That the authorities in charge of the water supply have carried out the previous recommendations of this Department in regard to protecting the watershed and in regard to providing duplicate apparatus for the chlorination of the water.
2. That the recommendation in regard to making the starch iodide test for the presence of excess chlorine in the water has not been carried out.
3. That the records at the chlorination building are inconsistent.
4. That the results of the analyses of samples of water collected at the time of the inspection indicate that the water was not being chlorinated effectively.

It was therefore recommended:

1. That the authorities in charge of the water supply take immediate action to carry out the recommendations of this Department in regard to making a daily test for the presence of free chlorine in the chlorinated water supply.
2. That the amount of chlorine applied to the water be increased so that a slight excess of chlorine is maintained in the water at all times.
3. That more satisfactory and accurate records of operation of the chlorination apparatus be kept.

ROSENDALE

A reinspection of the public water supply of Rosendale was made by Mr. W. J. Erickson of this Department, on June 9, 1921. Previous inspections were made of this supply in 1912 and 1915, and are reported upon in the Annual Reports of this Department for the respective years.

Rosendale, which is an incorporated village of about 1,000 inhabitants, is located in the eastern part of Ulster county, 7 miles southwest of Kingston on the Rondout creek. There is no public sewer system in the village, though there are a few private sewers emptying into the Rondout creek The water supply is owned by the village and is under the control of the board of water commissioners, for which Mr. James Brown is superintendent. About 90 per cent of the population use the supply, which is derived from a small spring-fed stream impounded in a reservoir located in the southeastern portion of the village. This reservoir supplies the lower section of the village. A few houses located in the higher sections of the village are supplied from a stream impounded in a reservoir about a mile and a quarter south of the village.

The watershed tributary to the low service reservoir is about 70 acres in area. This area is uninhabited. Signs warning against pollution of the supply are posted. The superintendent makes frequent visits to the watershed in order that any contamination may be prevented. The area of the watershed supplying the high service system is about 0.7 square miles in area. There are but two houses on the watershed. One is owned by the village and is unoccupied. The other is located about a mile above the reservoir. The area on which the buildings are located is practically level. A manure pile is located about 100 feet from the stream, as is also a pigpen and a chicken yard. The privy is well back from the stream. The reservoir is fenced so as to exclude animals and trespassers. The water in the reservoir was clear and little vegetation was noticed.

In a report on an inspection of the supply dated June 29, 1921, the following recommendations were made:

1. That the farm on the watershed of the high service be placed in a sanitary condition so as not to menace the supply.
2. That the local authorities continue their careful supervision and frequently inspect the sanitary conditions on both watersheds.
3. That, in case the village experiences any difficulty in improving the conditions upon the watershed, they apply to this Department for the enactment of rules and regulations for the sanitary protection of the water supply.

SACANDAGA PARK

An investigation of the public water supply of Sacandaga Park, Fulton county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, on May 24, 1921. Previous investigations of this supply were made in 1916 and 1918, and the reports thereon may be found in the Annual Reports of the Department for the respective years.

Sacandaga Park is a popular summer resort located in the northeastern part of Fulton county, on the Sacandaga river, 15 miles north of Gloversville. The park is controlled and operated by the Fonda, Johnstown and Gloversville Railroad Company. The permanent population at the park amounts to about 30 inhabitants. During the summer time, however, the population ranges from 2,500 to 3,000 inhabitants, and on holidays the visitors may increase the population to a total of some 5,000 or 6,000 persons. The water supply is owned and operated by the Fonda, Johnstown and Gloversville railroad, of which Mr. J. S. Plunkett is manager. The supply is derived from reservoirs located in the hills about 3 miles southwest of the park. There are two reservoirs, the upper reservoir having a total area of some 4 acres. The lower reservoir, which has an area of about ½ acre, serves as a distributing reservoir. Water is distributed by gravity throughout the park. The area around the reservoir is inclosed with a fence and posted to prevent visitors, causing any possible pollution of the water supply. The total watershed tributary to the reservoirs is about 1 square mile in area, and is wholly uncultivated. As a result of the recent inspection, it was found that a pipe line is in existence which connects the public water supply distribution system of the village of Northville with the Sacandaga Park distribution system. This pipe line crosses the river and is supported by the highway bridge. The Sacandaga Park supply is used at the railroad station, and is said at times to be used for filling the tanks used for drinking water in the coaches of the Fonda, Johnstown and Gloversville railroad.

In a report on an inspection of the supply dated June 20, 1921, it was recommended:

> That the railroad company continue to exercise careful supervision of the watershed to prevent any pollution of the supply.

SAG HARBOR

A reinspection of the public water supply of the village of Sag Harbor, Suffolk county, N. Y., was made by Mr. Alfred Mullikin, a representative of this Department, on August 9, 1921. Previous inspections of this supply have been made by this Division in 1909, 1914, and 1920, and the reports thereon published in the Annual Reports of the Department for those years.

Sag Harbor has a present population estimated at 3,500, about 20 per cent of which are served with water from the public water supply. The waterworks are owned and operated by the Sag Harbor Water Company, of which Mr. Henry F. Cook is president.

The water supply is derived from Long pond, about 1 mile southwest of the village. From the pond the water flows by gravity in Ligonee creek to a diverting dam, and thence through a 12-inch pipe to collecting wells, from which the water is pumped into the distribution system. The water supply is sterilized with liquid chlorine before being delivered to the consumers. The details of the waterworks system remain as described in the previous report of this Department.

The watershed tributary to the supply is about 0.1 square miles in area and consists of marshy land, having practically no pollution, but is, however, traversed by several highways and a railroad. There are no permanent sources of pollution on the watershed.

No action has been taken by the water company to carry out the previous recommendations of this Department in regard to employing an engineer to advise them as to the measures necessary to assure an adequate supply of satisfactory physical and sanitary quality, nor in regard to using the 4 original wells, with provision for aeration, followed by sedimentation and filtration for the removal of the iron.

In a report dated September 15, 1921, on an inspection of the supply, the following recommendations were made:

1. That the authorities in charge of the water supply maintain constant and careful patrol over the watershed, and see that the pumping plant is properly operated at all times.
2. That daily tests of the treated water for excess chlorine be made by the starch iodide method.
3. That complete daily records be kept of the amount of water pumped and the amount of chlorine used.
4. That the authorities in charge of the water supply carry out the previous recommendations of this Department that have not as yet been acted upon.

SALAMANCA

A reinspection of the public water supply of the city of Salamanca was made by Mr. W. J. Erickson on December 16, 1920. A previous inspection was made in 1916, the report of which may be found published in the 37th Annual Report of the Department.

Salamanca is a city of about 9,000 inhabitants located on both sides of the Alleghany river in the south central part of Cattaraugus county. Practically all of the city is served by the public sewer system which discharges directly into the Alleghany river. The water supply is owned by the city and is under the supervision of the board of water and light commissioners. The supply is derived from two sources, namely: Newton Run and 19 driven wells. The intake on Newton Run is located about 1½ miles north of the village. The water flows from this source to the distribution system by gravity. The wells are located near the north bank of the Alleghany river in the western part of the city. The water from this supply is pumped into the distribution system, consisting of about 22 miles of water mains. Practically all use the public supply and the average daily consumption is about 1,700,000 gallons a day. The waters of Newton Run are collected and impounded in a storage reservoir from which it passes to an intake reservoir and a distributing reservoir. The water is usually allowed to flow over the dam and over the natural bed of the brook to the intake located a short distance below.

The lower or distributing reservoir is located west of the brook 300 feet below the intake. It is possible to feed this reservoir from the upper storage reservoir through a pipe which connects the two. In times of heavy rains when the brook gets very turbulent the pipe connecting the intake with the distributing reservoir is shut off so that only the stored water is used. Should a heavy rainfall come suddenly before the caretaker has been able to close the valve, this turbid water is prevented from entering the mains by starting the pumps at the pumping station at the wells and maintaining a strong back pressure. The watershed tributary to the intake has an area of about 1½ square miles. The section is very hilly and is generally of a shaly structure overlaid with clay and gravel. There are three houses on the shed which are not ordinarily occupied, and there appears to be little chance of pollution.

Six new wells have been driven during the past year and are similar to the 9 original wells. As one of the original wells located about 20 feet from the river has been abandoned on account of the possibility of contamination and tightly capped, 14 wells are now in use. These wells are located at a safe distance from the river, the nearest being about 60 feet from the river's edge and are all tightly capped, and the suction line is tightly sealed to the casing. Each well is provided with concrete boxes so as to prevent pollution from the river water in times of freshets. There are 10 houses within 500 feet of the well and 25 houses within 1,000 feet of it. All these houses have been connected with the public sewers which have been laid in accordance with plans approved by this Department. The section in the vicinity of the well is of cast-iron pipe with leaded joints.

In a report on an inspection of the supply, dated January 17, 1921, it was recommended:

1. That the surface supply be filtered or not delivered to the consumers when rendered turbid by heavy surface runoff.
2. That the well boxes be surrounded with embankments so as to prevent the polluted river water from reaching them in times of flood.
3. That the city install and put in operation apparatus for the sterilization of all water delivered to the consumers by liquid chlorine.

SALAMANCA (Erie R. R.)

An inspection of the water supply used by the Erie railroad in the city of Salamanca was made by Sanitary Inspector W. J. Erickson on December 16, 1920. The water supply is derived from a dug well located south of the blacksmith shop in the shop yard of the Erie railroad from which it is pumped to the tanks and distribution system. No accurate data is available as to the consumption. Sixty to 70 engines are filled daily and all the water used by the shops and yards for industrial purposes is obtained from this well. Besides supplying the potable water for the shops, yard, depot and passenger coaches, water is also shipped from this well to other points on the line. The floor of the platform on which the pumps are set is constructed of planking. It is possible for oil drippings and other waste to get into the well through the open joints in these planks which were oil soaked at the time of the inspection. The well is dug through about 30 feet of gravel in which a narrow strata of clay was encountered, 6 feet of clay and 10 feet of gravel, below which there is clay strata. The conditions surrounding the well appear satisfactory. The nearest sewer to the well is about 175 feet distant and is constructed of cast-iron with leaded joints.

In a report on an inspection of the supply, dated January 21, 1921, it was recommended:

1. That wooden platform be immediately replaced by a properly drained, tight cement floor.
2. That the railroad consider placing the pumps in a separate pit or building not above the well.
3. That the railroad maintain the surroundings in a sanitary condition at all times so as not to endanger the well water.

SARANAC LAKE

A reinspection of the public water supply of the village of Saranac Lake, located in Essex and Franklin counties, N. Y., was made by Mr. Alfred Mullikin, a representative of this Department, on November 5, 1921. Previous inspections of this supply have been made by this Division in 1916 and 1919 and the reports thereon published in the annual report of the Department for those years.

Saranac Lake, a village with a present population estimated at 6,000, is located on the Saranac river, in the Adirondack mountains. Of the total population all are served with water from the public water supply. The waterworks are owned and operated by the municipality under the directions of a board of water commissioners of which Mr. E. E. Bellows is president. The water supply is derived from McKenzie pond located about 2½ miles east of the village in the Adirondack mountains. From the pond the water flows by gravity to the pumping station, where it is pumped into the distributing system, consisting of 25 miles of pipe. The average daily water consumption is approximately 1,400,000 gallons. Storage is provided by an equalizing reservoir about ½ mile southwest of the city. The reservoir is divided into two compartments and is surrounded by a substantial wire fence about 6 feet high. There appeared to be no permanent sources of pollution. Inspections of the reservoir are made once a week. The watershed of McKenzie pond, with the exception of 44 acres owned by the village, is owned by the State and has an area of 2.78 square miles. It is practically all wooded and is situated in a mountainous region. There are no houses on the shed and, therefore, little opportunity for pollution. McKenzie pond has an area of 0.35 square miles. Diverting dams direct water to the pond from several small streams. There is a considerable amount of dead timber along the shores of the pond.

The results of the microscopical examination show the presence of a small number of plants of the Diatomaceae order, known as Asterionella.

In a report on an inspection of the supply, dated December 5, 1921, the following recommendations were made:

1. That the authorities in charge of the water supply continue the careful supervision of the sanitary conditions on the watershed in order to discover and eliminate any possible sources of pollution that may be found to exist.
2. That consideration be given to providing aeration and sedimentation to the water from McKenzie pond and the treatment of the pond with copper sulphate in accordance with the directions outlined in the body of the report above in order that a water of satisfactory physical quality be assured at all times.
3. That the authorities in charge of the public water supply secure the services of a competent sanitary engineer to advise them as to the detailed procedure and the best and most economical methods of carrying out the above recommendations.

SCHENECTADY

A reinspection of the public water supply of the city of Schenectady was made by a representative of this Department on March 17, 1921. The reinspection was made upon the receipt by this Division of information that there was an epidemic of gastroenteric disturbances in the city. Previous investigations of the supply were made by this Department in 1917, 1918 and 1920, and reports thereon transmitted under dates of June 11, 1917, July 24, 1918, and March 31, 1920.

The water supply of the city of Schenectady is obtained from three dug wells at the waterworks pumping station located 2½ miles west of the city on a flat piece of land lying between the south bank of the Mohawk river and the hills which rise abruptly from the plain about 1,000 feet south of the river. The pumping station and the chief engineer's residence, just west of the station, are provided with plumbing fixtures, including flush toilets. The sewage and wastes from these fixtures are disposed of through a cast-iron sewer which passes directly over well No. 1 and discharges into the Mohawk river.

The inspection of 1920 was made on receipt by the Engineering Division of this Department of information that the number of cases of gastroenteric disturbances in the city was greatly increased above the number normally occurring, and that this increase had followed a noticeable turbidity in the water.

As a result of that investigation it was pointed out that the public water supply of the city of Schenectady had received polluted water from the Mohawk river and that it seemed probable that the epidemic of gastroenteric disturbances and the 50 odd cases of typhoid fever which occurred some 3 weeks later were caused at least in part by this contamination, and it was accordingly recommended that the ends of the 2 24-inch suctions in the gallery manhole be suitably sealed, that at least 2 sections of each suction be removed at a point between the gallery manhole and the river and the 4 ends thus exposed sealed with cast-iron flanges and tight gaskets and the excavation refilled with impervious material and that the pipe galleries, unless removed entirely, be thoroughly cleaned. It was also recommended at this time, as had been previously urged, that the sewer carrying the sewage from the toilets in the pumping station and the chief engineer's residence be relocated as far as possible from the wells and laid with cast-iron pipe and leaded joints at a suitable grade and at a reasonable distance from the ground.

The recommendations regarding the sealing and cutting of the 2 24-inch suctions were carried out before March 31, 1920, when the plant was reinspected by a representative from this Department, but no steps had been taken at that time toward the elimination of the sewer crossing well No. 1.

During the first part of March, 1921, it was learned by this Division that there had been an outbreak of gastroenteric disturbances in Schenectady of a similar character to that of March, 1920, but not so severe as the one of that year. Mr. Earl Devendorf, assistant engineer in this Department, was, therefore, on March 17, 1921, sent to Schenectady to inspect the condition of the water supply. An examination of the records of the river elevations indicated that during the first week of March water in the river had been from 10 to 12 feet above normal and that for the 4 days following March 4th it had been above the elevation of the floor of the suction pipe galleries mentioned above. An examination of the suction vacuum records showed that the water in the wells had risen in a corresponding manner.

A study of the results of analyses of samples collected indicates that without question the water supply of the city was contaminated in March, 1920, and March, 1921, and the comparison of the results of the examination of the samples taken at different parts of the system indicates that most of the pollution was apparently from well No. 1. The contamination of this well in March, 1920, was, as pointed out in the previous report, undoubtedly due mainly, if not entirely, to the entrance of river water into the well through the open 24-inch suction, and continued for some time after the direct flow had ceased probably by the ground water carrying into the well polluting matter deposited by the flow in the soil surrounding the well. The source of pollution of the well water in March, 1921, cannot be so definitely determined. It is possible and probable that the rise of the river and the consequent rise of the ground water level may have caused the ground water entering the well to carry into it some of the pollution left in the gallery and the surrounding soil the year before. It is also possible that, owing to the porous nature of the soil, the river water may, at the time when the river level was high, have found its way from the river through the soil into the well, or that changes in the hydraulic condition of the ground water may have caused pollution from some other source to enter the well. Well No. 1 is so arranged with its open joint masonry that it probably receives more water from the upper strata than the other wells. Another possible source of pollution of well No. 1 is the sewer passing over it. Whether the polluting matter reaches the well continuously or only under certain hydraulic conditions, such as may occur after heavy rains or at high stages of the river, is of course not known, since regular examinations of the water have not been made to determine this fact.

It is obvious, however, not only from the results of the analyses and the examination of the conditions surrounding the supply, but also from the fact that epidemics of gastroenteric disturbances and typhoid fever have occurred in the city, and that the water supply is, at least at times, subject to contamination, and for that reason unsafe for domestic use without treatment. It is possible that, by improving the conditions at the wells, water may be obtained that will be safe without treatment during the larger part, or perhaps the entire year, but this can only be determined by careful observations and a series of analyses covering at least one year; and until this is done it would seem necessary, if a safe water is to be delivered to the city, that the entire supply be continuously sterilized with a proper amount of liquid chlorine. It may, of course, be possible, later on, if the results of studies of the kind just mentioned so indicate, to dispense with the chlorination except under certain conditions, or when the river is above a certain level. Even under such conditions, however, the period of chlorination should extend over a sufficient time before and after a period during which conditions are such that the water is probably unsafe to prevent any possibility of contamination reaching the consumers.

In a report upon the supply dated May 12, 1921, it was recommended:

1. That a new sewer, properly laid with cast-iron pipe and lead joints, at a suitable grade and at a reasonable distance below the surface of the ground, be installed to care for the sewage from the pumping station and the engineer's house, and that this sewer be extended along the south side of the pumping station toward the east and then northerly to the river, being kept as far from the wells as possible.

2. That when the new sewer is completed the present sewer be cut between the highway and the river and disinfected, filled with cement grout and sealed in the manner described in the body of this report.

3. That careful studies be made of the water in the wells to determine whether the contamination which has been found at certain times is continuous or intermittent, and if intermittent at what periods it occurs.

4. That these studies include bacteriological examinations of samples from suitable points, made at least three times a week, and more frequently during times of high water and heavy rains, and complete or partial chemical analyses of samples at similar points at frequent intervals.

5. That the authorities in charge of the water supply immediately install apparatus for the sterilization of the supply with liquid chlorine and apply liquid chlorine to the water continuously, and in such quantities as may be found necessary to give a reaction for excess chlorine in the treated water and satisfactorily sterilize the supply, until the

results of the studies previously recommended definitely establish the fact that the water is at certain times safe for human consumption without treatment; and that, should this fact be established, the supply be treated with liquid chlorine continuously during the period in which there is danger of contamination, and extending over sufficient time before and after such period to afford a delivery of a safe water to the consumers at all times.

SENECA FALLS

A reinspection of the public water supply of the village of Seneca Falls, Seneca county, N. Y., was made by Mr. Alfred Mullikin, assistant engineer in this Department, on March 17, 1921. Previous inspections of this supply were made by this Division in the years of 1910, 1915, 1918, and 1920, and reports therein published in the Annual Reports of the Department for those years.

Seneca Falls is located in the town of Seneca Falls, near the north end of Cayuga lake, 42 miles west of Syracuse. The present population is estimated at 7,000. Of the total population, 80 per cent are served with water from the public water supply. The remaining 20 per cent are supplied from private wells. The waterworks are owned and operated by the Seneca Falls Water Company, under the direction of Mr. H. A. Carmer, local manager, and Mr. A. N. French, superintendent. The president, Mr. Herbert Payson, and other officials of the company reside in Portland, Me. The water supply is derived from Cayuga lake. The water is pumped at the lake shore through pressure mechanical filters into a distributing system. A steel standpipe is located in the northern part of the village on State street. The standpipe was cleaned last in 1917. The average daily consumption varies slightly during the year. In February it amounted to 1,000,000 gallons, and in March to 1,250,000 gallons, or 180 and 220 gallons per capita, respectively. In general, the details of the waterworks system remain as described in the previous report. The village supply is connected at several points with private industrial supplies. Cayuga lake forms a part of the New York State Barge Canal system and control gates have been installed at Mud lock on the outlet of the lake, by which its level may be varied to suit the requirements of the canal. The watershed has on it several municipalities including Ithaca, Aurora, Cayuga, Dryden, Freeville, Newfield, Trumansburg and Union Springs. The total population on the watershed is estimated at about 30,000. The city of Ithaca discharges its sewage after preliminary treatment into the lake, and some of the other villages discharge sewage directly into the lake or its tributaries. A large number of cottages along the shore of the lake have house drains and private sewers leading directly into the lake. In addition to this, the lake receives surface drainage from populated districts.

At the north end of the lake the Seneca river, now a part of the New York State Barge Canal, discharges into the lake just above the outlet and the control gates at Mud lock. The character of the watershed is very similar to that of Cayuga lake. The river, however, below the outlet of Seneca lake, receives the sewage of Geneva, Waterloo, and Seneca Falls. The sewage of Geneva is discharged into the river without treatment, as is part of that from Waterloo and Seneca Falls, while the remainder from the two last named places receives only preliminary treatment in settling tanks. This river is polluted with sewage from the population of about 25,000 people, most of which receives no treatment, and none of which receives more than preliminary treatment. In addition to this several industrial establishments, including the Empire mills and the Waterloo Woolen mills, discharge trade waste and domestic sewage into the stream. Normally the flow of water in Cayuga lake is northward and the polluted water of the Seneca river when it reaches the lake mixes with the lake water and flows north through the outlet at Mud lock. When the control gates at Mud lock are closed, or partly closed, so that the flow from Cayuga lake and the Seneca river is greater than the outflow through the gates at Mud lock, the polluted water of the river backs up into the shallow north end of the lake for several miles and considerably beyond the intake of the waterworks.

The water is pumped from the lake through four pressure mechanical filters. Alum is used as a coagulant and is applied from solution tank to the suction main. There is no coagulation basin. About 1,500 pounds were used during the month of February, or equivalent to a rate of 0.36 grains per gallon. A chlorine apparatus was installed and first operated on September 30, 1920. Chlorine has not been used since the latter part of February, 1921. The water is sterilized by the water company at such times as it seems most necessary. No scales are provided for checking the weight of chlorine, nor is there a duplicate apparatus. From the recent inspection it appears that the previous recommendations of this Department have not been carried out.

In a report on an inspection of the supply dated March 30, 1921, the following conclusions were made:

1. That the water company has not as yet taken action along the lines recommended by this Department, and that although the water supply was apparently free from active contamination at the time of the inspection, it is derived from a source subject at all times to pollution and at some times grossly polluted and cannot be considered of entirely satisfactory quality unless effectively purified.
2. That such purification can probably best be carried out by rapid filtration preceded by coagulation and settlement in a coagulation basin of at least two hours' detention and followed by sterilization with liquid chlorine.
3. That there are several connections between the public water supply system and private industrial systems deriving their water from polluted sources which endanger the quality of the village water.

It was, therefore, recommended:

1. That the authorities in charge of the public water supply of Seneca Falls carry out at once our previous recommendations as have not as yet been acted upon, namely:
    - (a) That the water be sterilized by the continuous application of liquid chlorine in such proportions as may be necessary, but at no time at rate of less than 0.2 part per million.
    - (b) That frequent tests of the treated water for excess chlorine be made by the operator at the filter plant, in accordance with the instructions issued by this Department and the rate of application of the chlorine regulated in accordance with the results of these tests.
    - (c) That daily tests be made of the raw water to determine the quantity of coagulant needed and the alum applied in accordance with the results of these tests.
    - (d) That a coagulating basin having a capacity equal to not less than two hours' flow be constructed and used in connection with the operation of the plant.
2. That all connections between the lines of the public water system and private supplies be severed, or if this is not practical such connections be equipped with double check valves arranged in accordance with the general plan approved by this Department.

SHERBURNE

A reinspection of the public water supply of the village of Sherburne, Chenango county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on December 8, 1920. A previous inspection of the supply was made by this Department in 1914 and a report thereon published in the Annual Report of the Department for that year.

Sherburne is located in the northeastern part of Chenango county, about midway between Utica and Binghamton. The present population is 1,500, of whom all are served by the public water supply and 300 outside the limits of the village are served by the public water supply. The waterworks are owned and operated by the village under the supervision of a board of waterworks, of which Mr. W. W. Benedict is president. The water supply is derived from Mad brook and is impounded in two reservoirs 1½ miles east of the village, from which it flows by gravity to the mains. As an auxiliary supply a well has been dug west of the village from which water may be pumped into the system.

Mad brook above the intake has a drainage area of about 3½ square miles, which is mostly cultivated and contains some pasture and forest land. There is one school building and about ten houses on the watershed, the former being served by chemical closets and the latter by privies. Since the previous inspection two farms from which contamination might reach the supply have been purchased. An inspection of the watershed is made three times each year. The waters of the lower reservoir are treated with copper sulphate every two weeks during the summer to prohibit algae growths. Ice is cut from the reservoir during the winter.

An auxiliary dug well supply was installed in 1918. The well is 31 feet in diameter and 22 feet deep and is provided with a reenforced concrete casing and is covered by a conical slate roof. The well was dug through clayey loam, gravel and blue clay before the stratum of water-bearing gravel was reached. The pumping machinery consists of a Worthington duplex pump having a capacity of 1,000 gallons per minute and operated by a steam engine attached to the pump. The nearest house in the vicinity is some 500 feet west of the well.

In a report dated January 21, 1921, on an inspection of the supply the following conclusions were drawn:

1. That the public water supply of Sherburne is ordinarily of fair sanitary quality but subject at times to small amounts of active contamination, due probably to surface wash from manured fields, pasture land and barnyards.
2. That at certain times of the year growths of algae give rise to objectionable tastes and odors, but these odors are chiefly objectionable from the esthetic standpoint.
3. That the chief points where contamination from human sources might occur are the two farms about ¼ mile above the upper reservoir on the cross road.
4. That the large storage capacity of the reservoir tends to minimize the effect of any pollution which might reach the waters of the brook, but that this storage cannot be relied upon to furnish sufficient purification at times of heavy rains.
5. That there is some danger of contamination of the supply by workmen at times when trees are planted on the land owned by the village.
6. That there is no evidence to connect the water supply with the causation of the cases of typhoid in the village in 1913.

It was therefore recommended:

1. That in case of recurrence of algrae growths in the reservoirs, the village authorities apply copper sulphate to the reservoirs in the proportion of 0.5 parts per million.
2. That every precaution should be taken to prevent surface wash from reaching the brook from the two farms above mentioned.
3. That every care be taken to prevent contamination of the supply by workmen when engaged in planting trees on the watershed near the upper reservoir.
4. That the village authorities request every householder upon the watershed to report at once any case of infectious disease in his family to the health officer so that proper precautions may be taken to prevent any waterborne infection reaching the water supply.

SHORTSVILLE

An investigation of the sanitary condition of the public water supply the village of Shortsville, Ontario county, was made by Mr. Earl Devendor assistant engineer in this Department, on December 17, 1920. A previou inspection of this supply was made in 1915 and a report thereon may b found in the 1915 Annual Report of the State Department of Health.

Shortsville is an incorporated village located in the northern portion Ontario county on the Canandaigua outlet, some 17 miles west of Genev The population at the time of the inspection was approximately 1,300. Th village has no sewer system and is served by means of cesspools, septic tank and privies. The public water supply is owned by the village and operate under a board of water commissioners, of which Mr. F. J. Bullock is president. The supply is derived from 2 drilled wells located about 1 mile sout of the village. Water from these wells is pumped to a standpipe and sto age tank from which the supply is distributed by gravity. The consumptio varies from 42,000 gallons per day to 90,000 gallons per day. Well No. is located some 100 feet south of the pumping station and is 6 inches i diameter and 103 feet in depth. The soil encountered in drilling the wel is said to be loam for the first 3 feet, sand and quicksand for the nex 15 feet and in rock for the balance of the distance. At the time of th inspection some seepage was noticed along the inner walls of the concret pit surrounding the well. Well No. 2 is located some 200 feet southeas of the pumping station and collecting well and at an elevation approximately 15 feet higher than Well No. 1. This well is a 6-inch drilled wel 86 feet in depth. A concrete chamber with a cover is provided around th well. There is some opportunity for pollution of this chamber, inasmuc as the concrete walls have not been carried above the surface of the groun sufficiently to prevent the entrance of surface wash. There is opportunit for surface water that may enter the chamber to flow into the well, fo the casing is not sealed. Water from this well is siphoned into the collecting well. The village owns the property surrounding the wells, pumping station and standpipe and the area is fenced. A farmhouse and bar are located some 1,200 feet east of the village property. The pumps ar used to pump the water from the collecting well to the standpipe and village distributing system. At the pumping station no sanitary convenience are provided for the operator.

In a report on an inspection of the supply, dated February 4, 1921, th following recommendations were made:

1. That, as previously recommended, the casing of Well No. 2 b sealed in order to prevent the opportunity of any surface water enterin the well supply.
2. That, as previously suggested, a privy with a removable containe be provided for the use of the operator at the pumping station.
3. That the authorities in charge of the public water supply continue their careful supervision of the supply in order that a wate of sanitary quality may at all times be furnished the inhabitants of th village.

SIDNEY

A reinspection of the public water supply for the village of Sidney Delaware county, N. Y., made by a representative of this Division on July 18, 1921. The published annual report of the Department for 1904 contains a description of the filter plant and reports on inspections of the supply are to be found in the annual reports for 1908, 1909, 1913 and 1919. No rules for the protection of the watershed have been enacted.

Sidney has a population of about 2,700, nearly all of whom are furnished with the public water supply. The village is located on the Susquehanna river in the northwesterly angle of Delaware county, about 2 miles southwest of Oneonta. The waterworks are owned and operated by the village under the direction of a superintendent. They were taken over from the Sidney Waterworks Company in the latter part of 1919. The water supply is derived by gravity from 2 sources, namely, impounding reservoirs on Collar brook and on Peckham brook. The water consumption has been estimated by the engineer in charge at 600,000 gallons per 24 hours. The watershed tributary to the Collar brook supply embraces about 1⅜ square miles of mountainous land. This watershed contained only 5 houses. The watershed tributary to the Peckham brook supply is approximately 5 square miles of rather sparsely populated country, largely forested, but used for light farming and pasturage. Thirteen houses were observed on this watershed, all but 3 of these houses being remote from the streams. Two open gravity mechanical filters are provided in the dam from which a main extends to the village. The conditions of the Sidney water supply appear to be substantially the same as noted in previous reports with the exception of the change of ownership and the following reported improvements: The house near the Collar brook supply has been bought and burned; lumbering operations on Collar brook stopped; 20,000 trees set to shelter Collar brook reservoirs; limited ice cutting only and under rigid inspection; copper sulphate treatment introduced last year; that an effort to trade land along the stream for upland had been defeated by popular vote, and that improvements in the purification plant had been discussed with a consulting engineer.

In a report on an inspection of the supply, dated August 27, 1921, the following recommendations were made:

1. That the village authorities carry out our previous recommendations of this Department as soon as possible.
2. That the treatment of the reservoir water in the spring with a proper proportion of copper sulphate be continued.
3. That an additional and larger pipe be laid from the village to a new point of discharge from the Peckham reservoir.

SIDNEY CENTER

A reinspection of the public water supply of the village of Sidney Center, Delaware county, N. Y. was made by Mr. N. H. Baier, sanitary inspector in this Department, on March 3, 1921. Previous inspections of the supply were made by this Department in the years 1909 and 1915, and reports thereon published in the Annual Reports of this Department for those years.

Sidney Center is located in the central port of the town of Sidney on Carr creek, a tributary of the Susquehanna river. The present population is 300, 50 per cent of whom are served by the public supply. The waterworks are owned and operated by the Sidney Center waterworks, of which Mr. C. C. Shaw is president. The water is derived from Herrick Hollow creek, a tributary of Carr creek. A reservoir has been constructed at a point about 1¾ miles south of the village. There was no way of estimating the consumption of water in the village. The village has no sewerage system, the houses being served by local cesspools and privies. Herrick Hollow creek, which rises about 3 miles south of the village, has a watershed consisting of some 360 acres of which 50 per cent is cultivated, 25 per cent forested and 25 per cent pastured. There are 5 houses on the shed having a total population of 18 people, and one small stock farm. The construction and location of the privies and barns are such that it is possible for pollution from them to reach the stream. The subsoil is sand, gravel and hardpan underlain by sandstone. The watershed is inspected four times each year.

It was observed at the time of the inspection that a number of small springs were seeping into the reservoir. The water flows for part of the distance over the surface of land which is used for grazing purposes. The reservoir has been thoroughly cleaned, the old intake pipe at the bottom has been replaced by a new one, located about 3 feet from the bottom and better circulation has been provided by the construction of a spillway. The insanitary conditions on the watershed have, however, not been abated, the enactment of rules and regulations has not been requested nor has apparatus for sterilizing the supply been installed.

In a report on an inspection of the supply dated March 29, 1921, the following recommendations were made:

> 1. That the authorities in charge of the public water supply take the necessary steps to remove the sources of pollution on the watershed and, if necessary, apply to this Department for the enactment of rules and regulations.
>
> 2. That consideration be given to the installation of a modern purification system to remove the color and turbidity and to render the water safe from a sanitary standpoint.
>
> 3. That, in the meantime, a chlorinating plant be installed to sterilize the supply and that chlorine be applied to the water in the proper amount and at all times.

SMYRNA

A reinspection of the public water supply of the village of Smyrna, Chenango county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department on December 8, 1920. Previous inspections of the supply were made by this Department in 1911 and 1915 and reports published thereon in the Annual Reports of the Department for those years.

Smyrna is located about 30 miles southwest of Utica and has a population of 270, practically all of whom are served by the public water supply. The waterworks are owned by the village and are under the direction of a water board, of which Mr. F. R. Taylor is president and superintendent.

The main source of water supply is a dug well located near the built-up section of the village. Some water is also obtained from springs located ½ mile northwest of the village. The water from the well is pumped and the water from the springs flows by gravity to the reservoir from which it flows by gravity through the distribution system.

The sanitary conditions surrounding the well are not entirely satisfactory. There are 6 houses within 200 feet of the well which are served by cesspools and it is possible that contamination from this source may reach the water supply. There are no houses on the watershed and around the springs.

The previous recommendations of this supply in regard to providing for the construction of the sewerage system or abandoning the supply and securing a new supply of unquestionable sanitary quality and in regard to installing an apparatus for sterilizing the supply with liquid chlorine pending the carrying out of the above recommendation, have not been carried out.

In a report dated February 4, 1921, on an inspection of the supply the following recommendations were made:

> 1. That the village authorities consider the installation of a modern sewerage system so that the pollution of the present well supply by local cesspools may be eliminated.
>
> 2. That the area about the springs be fenced in order to prevent cattle from straying onto the land and to keep off trespassers and that frequent inspections of the watershed be made.
>
> 3. That chlorinating apparatus be installed and put in operation to sterilize the water supply.
>
> 4. That frequent tests be made of the chlorinated water for excess chlorine in accordance with the directions issued by this Department and the rate of application of the chlorine regulated in accordance with the results of these tests.
>
> 5. That if it is found impractical to improve the conditions surrounding the supply, they develop a new source of supply of unquestionable purity, properly chlorinating the present supply until the new supply is ready for use.

SODUS

A recent inspection of the public water supply of the village of Sodus was made by Mr. Earl Devendorf, assistant engineer in this Department, on December 8, 1920. A previous investigation of this supply was made in 1915 and the report thereon published in the 1916 Annual Report of the State Department of Health.

Sodus is located in the northern part of Wayne county about 30 miles east of Rochester. The water supply is owned by the municipality and operated under a board of trustees, of which Mr. Henry Pett is superintendent. The supply is derived from a well, located about one mile south of the village. The excess over consumption is stored in a reservoir located on a hill near the village. Approximately 80 per cent of the population is served with the public water supply. The consumption varies from 39,000 gallons per 24 hours during the winter to over 110,000 gallons per 24 hours during the summer. As a result of this inspection it was ascertained that the privy at the pumping station had been removed. The manhole on the top of the well has been raised about 2 feet and the cover is kept locked. During the past summer two wells have been drilled about 20 feet east of the old well and about 15 feet apart. The wells, known as No. 1 and No. 2, are 43 and 46 feet in depth, respectively. In both cases loam was first encountered and then quicksand and then limestone rock at about 19 feet below the surface of the ground. The casing in well No. 2 was driven to a depth of 30 feet sealing the well but with well No. 2 it was impossible to drive the casing into the rock and after pumping several days the ground surrounding the casing sank. The wells were tested during the dry spell in the fall of 1920. The surface of the water in the wells was approximately 8 feet below the ground surface at the beginning of the pumping. Within 10 or 15 minutes the water surface would drop to some 18 to 20 feet below the ground elevation and remain constant at that elevation with a rate of pumping of 60 gallons a minute. At the time of the inspection a mixture of waste water and oil from the pumping station was being discharged into a ditch near the pumping station a short distance from the well. When the well surface is lowered, as it is during a drought, a kerosene taste and odor is noticeable in the water and that when dead ends of the distribution system are blown out it is particularly observed. The conditions on the lands surrounding the pumping station and well are practically the same as those described in the 1916 report.

In a report on an inspection of the supply dated January 7, 1921, the following recommendations were made:

(1) That, as previously recommended, the authorities in charge of the public water supply purchase additional land surrounding the wells and provide a suitable fence around the wells.

(2) That a privy with a removable container be provided at the pumping station, as previously recommended.

(3) That the village authorities consider the general information given above with regard to the development of the new wells and if necessary retain a competent sanitary engineer to aid them in working out the details.

(4) That a drain pipe be provided for carrying the waste water and oil away from the vicinity of the well in the general manner described in the body of the report.

ST. JOHNSVILLE

An investigation of the public water supply of the village of St. Johnsville, Montgomery county, N. Y., was made by Mr. Earl Devendorf, assistant engineer in this Department, accompanied by Dr. James S. Walton, sanitary supervisor, on March 7, 1921. Previous investigations of this supply have been made in 1907, 1911, 1912, 1914, 1915 and 1918 and reports thereon may be found in the various Annual Reports of the State Department of Health.

St. Johnsville is an incorporated village located in the northwestern part of Montgomery county, on the Mohawk river, some 7 miles east of Little Falls. The population is approximately 3,000. The village is served by a system of sanitary sewers which discharge into the Mohawk river without treatment. The public water supply is owned by the village and operated under a board of water commissioners, of which Mr. J. A. Rainey is president and Mr. J. H. Schiemer is superintendent. The main supply is derived from springs located near Lasselville, about 6 miles northeast of St. Johnsville. At this point the water is collected into a small reservoir from which it flows by gravity to a cast-iron pipe line to two concrete storage reservoirs located about ½ of a mile north of the village. From these reservoirs the water flows by gravity to the distributing system. The consumption amounts to about 300,000 gallons per 24 hours, of which an average of 30,000 gallons per day are used for commercial purposes. This corresponds to a per capita consumption of 10 gallons per day for industrial use and 90 gallons for domestic use. The supply receives no purification.

At the distributing reservoirs a pipe line is located in the creek bed and provided with gate valves for taking water from Zimmerman creek which flows by the reservoir. In the past, during times of shortage of water, and at the present time when the reservoirs are cleaned, water from Zimmerman creek is allowed to flow into the reservoir. The small reservoir and springs located near Lasselville were not visited at the time of the inspection. It is stated, however, that the condition of the springs and reservoir remain about the same as noted at the time of the former inspection. The reservoir and some of the stone drains leading from the springs were cleaned out last fall. The village now owns the entire watershed around the springs consisting of 40 acres of land, and it is planned to enclose this with a tight wire fence and post the area to prevent trespassing.

In addition to the above source of supply there is a small spring supply located on the Brown property north of the village, which is used by eleven families and in addition serves two drinking fountains and the hydrant from which the sprinkling cart used for sprinkling the village streets is supplied. The masonry walls of the reservoir had not been carried up above the surface of the ground and no ditches provided for diverting the surface wash away from the vicinity of the reservoir. The reservoir is located on the western bank of the small creek and highway running north of the village and near the factory of the Dairyman's League. There are no nearby permanent sources of pollution but the spring is subject to accidental, incidental or wilful contamination from chance visitors to the spring, since the area surrounding the spring is not fenced. The amount of water supplied by the spring flow is not known. It is stated, however. that the supply has proved adequate in the past for the number of consumers using this supply.

The recent inspection was made as a result of complaints received at this office regarding the occurrence of tastes and odors in the village water supply. At the time of the inspection it was found that the odors and tastes in the main supply had been noted on Monroe and Cottage streets and in the small spring supply on North Division street. At the Brown residence on North Division street, however, at the time of the inspection no tastes or odors were observed in the supply and the family stated that no odors or tastes had been noted for the past two or three weeks. In this connection it should be noted that the spring supply had been cleaned out, according to the statement of the superintendent, some three weeks previous. At the Englehart and Conrad residences on Monroe and Cottage streets samples of water were collected for analysis. The water collected from the Englehart residence on Monroe street was observed to have a very slight aromatic taste and odor, which was more noticeable in the water drawn from the hot-water faucet. The family stated that this odor had been noticeable since the fore part of January, 1921. At the Conrad residence on Cottage street no taste or odor was observed in the water drawn from the cold-water faucet, although an aromatic odor could be detected in the hot water in the tea kettle found on the stove at the time of the inspection. No complaints had been received from residents located in other parts of the village and it is thought that the slight odor complained of had been noticed by those residents living near the reservoir and having a more acute sense of taste and smell than the other residents.

The reservoirs were visited at the time of the inspection and samples of growths of aquatic organisms were collected from each reservoir and brought to this office for identification. The organisms collected from the distributing reservoir were found to belong to the chlorophyceae, while the organisms collected from the small spring reservoirs were found to be diatomaceae and mainly symbella. A letter was transmitted to the village authorities advising them to treat the water with copper sulphate in the ratio of 3 pounds per million gallons and to repeat the dosing if found necessary in order to prevent the multiplication of the organisms causing the taste and odors in the water supply.

In a report upon the supply dated March 22, 1921, it was recommended:

1. That the village authorities apply copper sulphate in proper amounts in the distributing reservoir at the first appearance of the aquatic organisms in order to prevent the growth of the organisms and the consequent tastes and odors.
2. That the village authorities absolutely sever the Zimmerman creek supply from the main supply by removing a section of the cast-iron pipe connecting the two supplies.
3. That in case Zimmerman creek water supply is used, the village authorities provide for purification of this supply either by filtration or by sterilization of the supply with liquid chlorine.
4. That, in view of the shortage of the water supply the village authorities continue the installation of meters in order to minimize the waste and make a careful survey of the distribution system to discover and eliminate leaks.
5. That, the reservoir of the small spring supply be covered to prevent the entrance of foreign substances and the growth of aquatic organisms.
6. That the area surrounding the springs be fenced, a curb provided and ditches dug to prevent surface wash entering the spring supply.
7. That the authorities in charge of the public water supply erect a tight fence provided with a locked gate around the watershed of the Lasselville springs and post the area against trespass in order to eliminate the possibility of pollution of the supply by visitors to the watershed.

ROUSES POINT

A reinspection of the public water supply of the village of Rouses Point, Clinton county, N. Y., was made by Mr. W. W. Young, assistant engineer in this Department, on June 12 and 13, 1921. Previous inspections of the supply were made by this Division in 1910, 1911, 1914, 1918 and 1919, and the reports thereon published in the Anuual Reports of this Department for the years 1910, 1911, 1914, 1919 and 1920.

Rouses Point is a railroad center, with a population estimated at 1,700, located on the outlet end of Lake Champlain, 190 miles north of Albany and about 50 miles south of Montreal. Practically the entire population is served by the public water supply. The waterworks are owned and operated by the village under the direction of a board of water commissioners.

The water supply is derived by pumping from Lake Champlain through screened orifices located 1 foot above the bottom of the lake, about 1,200 feet from the shore, where the water is 10 to 15 feet deep. No storage is provided. The present water consumption appears from the pumping records to be about 400,000 gallons per day, 230 gallons per capita per day. A large proportion of this is used by the Delaware and Hudson Railroad Company. In general the details of the waterworks system remain as described in the previous report with the exception of the fact that apparatus for applying liquid chlorine to the water has been substituted for the calcium hypochlorite apparatus.

This new chlorinating apparatus is of the manual control solution feed type and is connected to the suctions of both of the pumps. The apparatus was installed in the early part of July, 1920 and a second cylinder of chlorine was required for installation about the middle of March of this year. No extra cylinders or set of parts are kept on hand.

It was impossible to check the operation of the chlorination plant, for the reason that one of the connections had broken on the 21st of May and had not been repaired at the time of the inspection, June 12 and 13. Assuming that 400,000 gallons a day were pumped for 250 days during which 100 pounds of liquid chlorine were used the rate of application would appear to be about 1 pound of chlorine per million gallons of water, or about 0.12 parts per million, an amount generally found too small to effectively disinfect a water supply.

In the report of this Department made following the inspection of October 9, 1918, recommendations were made that the amount of hypochlorite be increased to such an extent that a sample drawn from the pump discharge would contain a slight excess of free chlorine at all times and that the former recommendations regarding the installation of a modern and permanent filtration plant be carried out. In the last previous report it was recommended that liquid chlorine be substituted for calcium hypochlorite and that consideration be given to the installation of a modern filtration plant

From the recent inspection it appears that these recommendations have been acted upon to the extent of installing apparatus for the treatment of the supply with liquid chlorine but apparently no steps have been taken toward the installation of a modern filtration plant.

In a report upon the supply dated July 7, 1921, the following recommendations were made:

1. That the chlorinating apparatus be immediately repaired and put in operation.
2. That an extra apparatus be secured and kept in readiness for use at all times.
3. That the water be treated with chlorine continuously in such quantities as may be necessary to effectively sterilize it.
4. That the rate of application of the chlorine be determined by tests of the treated water for excess chlorine made at frequent intervals by the attendant in charge of the plant in accordance with the instructions issued by this Department, but that the rate never be less than 0.2 parts per million.
5. That the chlorine cylinder be kept on a platform scale and that the weight of the cylinder and its contents be recorded daily to check the rate of application of the chlorine.
6. That an extra cylinder of chlorine be kept on hand at all times.
7. That the village consider the installation of a modern filtration plant.

A supplementary reinspection of the public water supply of the village of Rouses Point, Clinton county, N. Y., was made by a representative of this Department on August 18, 1921. An inspection of this water supply was previously made on June 13, 1921, and in a report on this inspection under date of July 9, 1921, it was pointed out that the apparatus for treating the water supply with liquid chlorine, broken on May 21, had not been repaired.

The analyses of the water made at the time of this previous inspection showed active contamination and upon the receipt of this report the Surgeon General of the United States Public Health Service prohibited the use of this water for drinking and culinary purposes on railroad cars engaged in interstate traffic. The recent inspection was made at the request of the United States Public Health Service and the Delaware and Hudson Railroad

Company, who advised us that the chlorine apparatus had been repaired and put in operation.

As a result of this inspection it was found that the apparatus had been repaired and was operating in a satisfactory manner. It was also found that necessary spare parts had been ordered.

In a report dated August 23, 1921, it was recommended that the previous recommendations of this Department be fully carried out.

STAMFORD

A reinspection of the public water supply of the incorporated village of Stamford with special reference to the sterilization of an auxiliary source of supply, was made by Mr. Alfred Mullikin and Mr. Earl Devendorf on September 14, 22 and October 1, 1921. Previous investigations of this supply have been made by this Division in 1908, 1917 and 1919, reports on which may be found in the Annual Reports of the Department for the respective years.

Stamford is located in the northeastern part of Delaware county and has a resident population estimated at 950, which is increased in the summer by visitors to some 3,000. Practically all of the inhabitants are served with the public water supply. The waterworks are owned by the Stamford Water Company, of which Judge J. P. Grant is president. The water supply is derived from the headwaters of the Delaware river on which a reservoir has been constructed and from two drilled wells which are used as an auxiliary source of supply. From the reservoir the water is delivered by gravity and from the wells the water is pumped through three pressure mechanical filters to the water mains. The consumption is estimated to vary from 100,000 to 300,000 gallons per day. Storage is provided in a reservoir formed by an earth dam.

The watershed area tributary to the surface supply is 1¼ square miles and consists of a moderately populated farming district with an estimated resident population of 24 per square mile. An examination of the immediate surroundings of the reservoir and of the creek show the possibility of considerable pollution entering the supply in surface wash from pastures and of direct contamination from cattle which have free access to the stream above the reservoir.

The filtration plant used for treating the well water is located approximately ¼ of a mile north of the village and is located in a wooden frame structure adjoining the pumping plant and wells. The filters consist of one Federal and two Continental Jewell pressure mechanical filters. The filters were overhauled in 1920 and new sand placed in them. Alum may be applied by means of the Shunt system, although the operator stated that the alum is not always used. The recent inspection was made as a result of a notice received by us that the regular water supply was becoming depleted and requesting the use of the Department emergency chlorination apparatus, as it appeared likely that it would be necessary to augment the supply by pumping from Churchill lake, an auxiliary supply, subject to considerable opportunities for pollution from residents and trespassers in the vicinity. Subsequent inspections were made at the request of the village authorities to furnish advice in the matter of the purification of the auxiliary supply. At the time of the inspection, on October 1, it was found that the water company had used the lake water without treatment from September 17 to 21 and from September 29 to October 1, inclusive, for approximately 10 hours per day and that pumping had begun on the day of the inspection at 6 A. M. The pump was delivering approximately 100 gallons per minute, and it was said that it was necessary to resort to the lake supply, as the regular supply had proven insufficient to meet the demands of the village.

At the time of the inspection it was found that the water company had repaired and cleaned out an old reservoir formerly used as an auxiliary source of supply, and it was learned that by the laying of a pipe line this source of supply would be available. Furthermore, the water company had erected a pumping station and purchased new pumping equipment for furnishing this supply to the village under pressure, as the reservoir is not at sufficient elevation to readily supply by gravity the water to the village. It was thought, therefore, that it would not be necessary to use the Churchill lake supply again. As a result of these conditions it was concluded that it would be useless to install the Department chlorination apparatus, as by the time the apparatus had been installed pumping would undoubtedly not be again necessary. The water company and the village officials were, however, instructed with regard to the use of hypochlorite of lime for emergency sterilization of the supply should it become necessary to pump from Churchill lake again. Directions were left for making the starch iodide test for excess chlorine and the water company were advised to dissolve 2 pounds of hypochlorite of lime in a 50-gallon barrel of water which should be connected by means of a hose or pipe to the suction line of the pump and a gate valve provided for regulating the application of the hypochlorite solution in accordance with the results of the starch iodide tests. On the basis of 12 hours, pumping at the estimated rate of 100 gallons per minute, it would be necessary to use approximately ½ barrel of this solution per day for applying chlorine at the rate of .6 parts per million. The water company was further advised to notify the health officer and this Department if it again became necessary to pump water from the lake. It was learned at the time of the inspection that the water company had engaged an engineer to study their problem and aid them in augmenting and improving the present supply.

In a report on an inspection dated December 31, 1921, the following recommendations were made:

> 1. That the previous recommendations made by this Department in regard to the use of alum, the careful operation of the filter plant, the installation of a chlorination apparatus and the maintaining of a careful patrol of the sanitary conditions on the watershed, be carried out in order that a water supply of good sanitary quality may be furnished the residents at all times.
>
> 2. That in case the water company retain the old reservoir, provisions be made for treating this supply by means of liquid chlorine in order that the supply may be of a safe sanitary quality for human consumption.
>
> 3. That should it again be necessary to resort to the use of Churchill lake, the water company provide for the sterilization of the auxiliary supply.

SUMMITVILLE

A reinspection of the public water supply of the hamlet of Summitville, Sullivan county, N. Y., was made by Mr. W. W. Young of this Division on October 31, 1921. A previous inspection of this supply was made in 1920 and the report thereon published in the Annual Report of the Department for that year.

Summitville is an unincorporated village about 33 miles southwest of Kingston and has a population of about 200. It is not provided with a sewer system or a public water supply other than the one provided by the railroad for restricted use. The supply provided by the railroad company is derived from a small mountain stream flowing through a steep ravine, entering the abandoned western Hudson canal at a point about 1½ miles south of Summitville. The water is collected in the reservoir formed by a dam about 100 feet in length, placed at a point on the ravine about ⅛ of a mile above a 6-foot culvert through which the stream passes before entering the canal. The reservoir is provided with a spillway about 10 feet wide and 8 inches deep. The water is conducted by gravity through a 4-inch pipe provided with an inclined perforated strainer about 5 inches in diameter, extending through the dam at the reservoir to three places.

namely, the railroad depot, the hotel opposite the railroad depot and the tank supplying the railroad locomotives. It appears from information furnished our representatives that the top of the pipe in this tank is above the overflow level of the water in the tank, so that when water is pumped into the tank from the canal by an emergency pump which is provided for this purpose, it cannot enter the water supply system from the reservoir.

The watershed above the reservoir has an area of about 1 square mile, is quite precipitous and heavily forested. A road passes parallel to the stream and crosses it in the upper section of the watershed. This road is extremely rocky and little used. The only house on the watershed is near Summitville about ⅛ of a mile from the stream tributary to the reservoir.

In a report on the supply, dated December 15, 1921, the following conclusions were made:

1. That while the need for carrying out the previous recommendations of this Department still remains, the authorities in charge of the water supply have not carried out these recommendations.
2. That the supply is subject to dangerous contamination from the wash from the highway on the watershed and from animals and chance visitors on the watershed.

It was, therefore, recommended:

> That the present supply be abandoned for drinking purposes and another supply of satisfactory sanitary quality be developed, or that satisfactory means of filtration or sterilization of the present supply be provided.

SYRACUSE

An investigation of the public water supply of the city of Syracuse was made by Mr. Earl Devendorf, a representative of this Department, on June 27, 28 and 29, 1921. A previous investigation of this supply was made by this Division in 1919, and a report thereon published in the annual report of the Department for that year.

Syracuse is a city of some 170,000 inhabitants, located in the central part of Onondaga county at the southeast end of Onondaga lake, and is a growing industrial and manufacturing center. The city is served by a comprehensive sewer system which discharges into the waters of Onondaga lake or its tributaries. The public water supply is owned by the city and operated by the bureau of water, of which Mr. William J. Apps is superintendent. The supply is derived by gravity from Skaneateles lake, some 19 miles southwest of the city, and is sterilized by means of liquid chlorine before being delivered to the distributing reservoirs located in the city. A history of the development of the present water supply was given in detail in our previous report, dated November 14, 1919, and reference is made to that report for this information.

The water supply is taken from Skaneateles lake at a point near the middle of the lake approximately 6,400 feet south from the north shore and in about 40 feet of water. The intake is about 20 feet from the bottom of the lake and is protected by a ¼-inch mesh copper screen. From this intake the water is conveyed by gravity through a 64-inch pipe to a screen chamber located on shore over which a stone building has been erected. In this building gates are provided for regulating the flow of water through the two 30-inch pipe lines leading to Woodland reservoir in the city. In the screen chamber a Wallace and Tiernan, manual control, chlorination apparatus has been installed and chlorine was being applied to the water at the rate of .3 parts per million at the time of the inspection.

Due to the recent growth of the city and the heavy increase in water consumption the two 30-inch conduits have, at times of maximum consumption, been overtaxed to such an extent that it was impossible to deliver the water to the standpipe due to the loss of head and consequent decrease in the capacity of the pipe line. The city has, therefore, installed an electrically operated pump which is used at times of heavy water consumption to pump the water to the standpipe and at these times water from both conduits is discharged directly into the Woodland reservoir. The gate house is provided with the necessary valves and connections for regulating and changing the flow to the reservoir and standpipe. From the Woodland reservoir two 36-inch and one 30-inch distributing mains supply water to the low pressure distribution system of the city and from the standpipe a 24-inch distributing main supplies the water to the high-pressure distribution system. From a record of the average daily consumption by months — from January 1920, to May 1921 — the total daily consumption varies from a minimum of 23,504,000 gallons to a maximum of 26,016,000 gallons, giving a minimum and maximum average daily per capita consumption of 136 and 153 gallons, respectively. In general the details of the water system remain as described in the previous report. It appears that the chlorination plant has been operated continuously since the last inspection in 1919, and that it has been the practice for the past 2 years to apply chlorine at the rate of about 0.1 parts per million during the winter and to increase the rate of application to about 0.3 parts per million each spring. Instead of changing the rate of application of chlorine as in the past, sufficient chlorine should be applied continuously to the water to give a slight excess of free chlorine by the starch iodide test in order to provide for the effective sterilization of the water supply of the city at all times.

Skaneateles lake, from which the supply is derived, is one of the smallest of the Finger lakes and is approximately 15 miles in length and 1 mile in width. On the watershed there is a total of some 900 houses. Some 273 of these houses are located along the shores of the lake and, for the most part, are used only during the summer months. The permanent resident population is estimated at 3,000, or approximately 50 per square mile. During the summer months this population is increased and is estimated at some 4,500, or approximately 70 per square mile. There is no large stream tributary to the lake, the majority of the tributaries being small streams flowing in from the side hills forming the valley in which the lake is located.

Rules and regulations for the sanitary protection of the water supply were enacted by this Department on November 25, 1907. It is found that the city carefully maintains an effective oversight and control of the lake and the watershed and rigorously enforces the rules and regulations. To this end the city employs 5 men during the summer months and 3 men the year round to daily patrol the shores of the lake in order to detect and eliminate any possible source of contamination that may exist on the watershed. The city owns 3 motor launches which the men use to collect the garbage and removable containers provided in the privies at the cottages located along the lake. The entire area is covered about once a week. The garbage together with the contents of the containers provided for the privies is disposed of by burial in a plot of ground owned by the city about ½ mile back from the head of the lake. Great care is taken in carrying out the above procedure and to see that the supply is not subject to any possibility of contamination. These precautions should be continued by the city authorities in order to insure a continuance of the present satisfactory quality of the lake water.

Formerly a number of passenger steamers were operated on the lake but these steamers have been abandoned and removed from the lake. There was also a summer resort known as Cliff Haven, formerly located at the south end of the lake. The city, however, purchased the land and removed the hotel and cottages and at present the land is occupied only by the caretaker employed by the city.

Under the present careful supervision of the city authorities there would appear to be little likelihood of any permanent sources of contamination being maintained on the watershed. In view of the use of the lake for pleasure purposes and the comparatively large number of summer visitors along the shores and upon the waters of the lake there is, however, more or less opportunity for contamination from the accidental, incidental or wilful pollution arising from boating and fishing on the waters of the lake. Furthermore, boating or fishing in the vicinity of the intake might occasion direct contamination of the supply. For these reasons the present effective sterilization of the public supply should be continued at all times. The city authorities should, however, purchase and install a duplicate chlorinator in order to insure the continuous application of chlorine at all times and to prevent any interruption in the chlorination of the supply due to the possible failure of the present apparatus to operate through breakage or for any other reason.

At the time of the inspection the city authorities were considering the construction of an additional conduit for a portion of the distance from Skaneateles lake to the city, in order to augment the capacity of the present conduits. The present conduits have a capacity of some 13,000,000 and 14,000,000 gallons, respectively, and, during times of maximum consumption, the capacity of these conduits is exceeded, due to a reduction of capacity on account of the excessive loss-of-head resulting from the high velocities in the conduits at the time of the high rates of consumption. It is planned to begin construction of the new conduit in the near future.

Some trouble was said to have been experienced this year as in the past from tastes and odors existing in the water. During this year the tastes and odors lasted for a period of about one week, but these conditions had, however, disappeared at the time of the inspection. The matter of cross-connections of the public water mains with any auxiliary fire supplies was taken up with the city authorities who were of the opinion that all such cross-connections had been removed. Information obtained from the Underwriters' Association, however, indicates the possibility of cross-connections existing at the Will Brennan Candle Company's factory, located in the town of Onondaga, the Cross Hines factory on Wolf street and at the Franklin Automobile works. The city authorities should ascertain if there are any cross-connections at these factories or elsewhere between the public mains and any auxiliary fire supply and cause their complete severance or the installation of double check valves in accordance with the plans approved by this Department.

In our previous reports it has been recommended that the city authorities continue their careful and diligent oversight of the sanitary conditions at the lake and upon the watershed; that chlorination be carried on at all times and that studies be made of aeration of the supply and the application of copper sulphate in order to reduce the trouble caused at certain times of the year by algæ growths. From the recent inspection it appeared that the city authorities have carried out the former recommendations with regard to applying the chlorine continuously and are maintaining a most thorough and careful control and oversight of the sanitary conditions both at the lake and upon the watershed in order to prevent any possible chance contamination of the supply and that some studies have been undertaken with a view to reducing the trouble from algæ growths.

In a report upon the supply, dated August 26, 1921, it was recommended:

1. That the city authorities continue their present very careful supervision of the sanitary conditions at the lake and upon the watershed strictly enforcing the rules and regulations enacted by this Department.
2. That liquid chlorine be applied to the public water supply continuously in sufficient quantities to properly sterilize the water and give a slight excess of free chlorine by the starch iodide test at all times.
3. That a duplicate chlorination apparatus be purchased and installed at the gate house in order to insure the continuous sterilization of the public water supply.
4. That the city authorities make a survey of the present distribution system to discover any cross-connections of auxiliary fire supplies with the public mains and eliminate them or provide for the installa-

tion of double check valves in accordance with the plans approved by this Department.

5. That as previously recommended the city authorities should continue studies of aeration of the supply and the application of copper sulphate in order to reduce the trouble caused by algæ growths.

THENDARA

A reinspection of the public water supply of the village of Thendara, was made by Mr. Earl Devendorf, a representative of this Department on August 25, 1921. A previous investigation of this supply was made by the Division in 1920 and the report thereon published in the Annual Report of the Department for that year.

Thendara is an unincorporated village located in the central part of Herkimer county about 40 miles north of Utica and on the Moose river. The resident population at the time of the inspection was estimated at 400, practically all of whom are furnished with the water from the public water supply as well as the additional summer population estimated at 100. The waterworks are owned and operated by Mr. Lyon DeCamp. The water supply is derived from springs located on a hill three-quarters of a mile west of the New York Central Railroad station. From the small reservoir the water is led to the village where it is distributed through some two miles of water mains. Little or no storage is provided. The watershed tributary to the supply is wholly uninhabited and no permanent sources of pollution exist on the watershed.

In a report on an inspection of the supply dated October 17, 1921, the following conclusions were made:

1. That the authorities in charge of the water supply have endeavored to carry out the previous recommendations of this Department in carefully supervising the supply and making frequent inspections of the watershed in order to discover and eliminate any possible source of pollution that may be found to exist.

2. That during periods of cold weather when the inhabitants allow the faucets to remain open to prevent freezing, the supply is depleted, and during the summer season with the increased summer population, the supply is at certain periods of maximum consumption throughout the day also depleted, and at times wood dirt from the reservoir is drawn through the faucets.

It was therefore recommended:

1. That the authorities continue their careful supervision of the supply making frequent and careful inspections of the watershed to prevent any contamination of the public water supply.

2. That the authorities clean the small intake reservoir frequently in order to prevent any large accumulation of wood dirt that will enter the public mains and increase the present storage capacity of the reservoir in order to provide an adequate supply at times of maximum consumption.

THERESA

A reinspection of the public water supply of the village of Theresa, Jefferson county, N. Y., was made by a representative of this Department on September 21, 1921. Previous inspections of this supply have been made in 1911, 1915, 1918 and 1919, and the reports thereon published in the Annual Reports of the Department for those years.

Theresa has a present population estimated at about 900 and is located on a bluff at the falls of the Indian river, 96 miles from Utica and 98 from Syracuse. About 90 per cent of the total population are served with the public water supply. The waterworks are owned and operated by the municipality under the direction of the water commissioners; Mr. E. M. Wheeler is superintendent and the pumping plant is operated by the Farmers Milling Company. The water supply is derived from a pond in Indian river near the center of the village. The water is delivered by pumping through the distribution system. The average daily water consumption is approximately 45,000 gallons. The watershed tributary to the supply embraces about 313 square miles and contains a population of about 22 per square mile. This population is, however, largely widely scattered and remote from the main stream except for the villages of Philadelphia and Antwerp. These two villages together contain about 2,000 persons, and considerable sewage from these places is discharged directly into Indian river. In the village of Theresa there are specific sources of contamination from about 30 houses which are located along a street at the top of the steep bank of the river on the north side of the village. Four or more of these houses have flush toilets. Many or all of these dwellings discharge their sewage either directly upon the narrow flat below the bank or upon the steep slope leading to this flat. In addition at times of high water this narrow flat is flooded by the stream. There are one or two lakes and other possible sources of water supply within 3 or 4 miles of Theresa and the moving of the pumping station a mile up-stream has been discussed; but no action taken. The plant for the sterilization of the water was installed about a year and a half ago but was not in operation at the time of the inspection due to the exhaustion of the only cylinder of chlorine purchased and to the stoppage of the small screen. A new chlorine cylinder was reported to have been ordered and a larger screen was being installed. It was claimed that the public supply is used for potable purposes by only about 10 per cent of the population, and that the remainder depends upon wells for drinking water.

In a report on an inspection of the supply dated October 6, 1921, the following conclusions were made:

1. That while the need for carrying out the previous recommendations of this Department still remains, the authorities in charge of the water supply have carried out these recommendations only in part.
2. That there remain certain opportunities for dangerous infection of the supply.
3. That the chlorine apparatus was not in operation at the time of the inspection.

It was therefore recommended:

1. That the municipal authorities in charge of the water supply carry out at once such of our previous recommendations as have not as yet been acted upon.
2. That the village provide scales and spare parts for the chlorination and extra cylinders for the chlorine apparatus to insure the continuous chlorination of the supply.
3. That starch iodide tests be made daily to determine the amount of chlorine to be applied.
4. That the people be warned to boil the water in the case of interruption of the chlorination of the supply.

TICONDEROGA

A reinspection of the public water supply of the village of Ticonderoga was made by Mr. Earl Devendorf, a representative of this Department on June 2, 1921. Previous inspections of this supply have been made by this Division in 1906, 1907, 1913 and 1918 and the reports thereon published in the Annual Reports of the Department for the respective years.

Ticonderoga is an incorporated village with a present population estimated at 2,200 and is located in the southeastern portion of Essex county between Lake George and Lake Champlain, 100 miles north of Albany. Ticonderoga creek which connects Lake George with Lake Champlain also flows throug the village. Some 3,500 people are served with the public water supply a the mains extend outside the village limits. The waterworks are owne and operated under a board of trustees of which Mr. Albert Weed is presiden

The water supply is derived from two main sources of supply; brooks an springs feeding to a reservoir on Chilson Hill, and two intakes, gravity an suction, on Lake George in the southerly part of the village. From the Chi son Hill reservoir and from the intake south of the bridge at Lake Georg water is supplied by gravity through 12 to 15 miles of water main The Chilson Hill supply mains and the Lake George gravity mains are lai parallel in many streets and so arranged that the gravity Lake Georg system in most cases can be used in emergencies. In general the detai of the waterworks system remain as described in the previous reports.

Since the last previous inspection, no attempt has been made to impro the sanitary conditions existing on Chilson Hill brook above the poin of intake. The privy of the caretaker's house at the reservoir is located s close to the reservoir as to constitute a source of potential danger and ha not been removed as previously recommended. Some attempt has been mad to devolop the Chilson Hill spring reservoir. It was noted that the basi surrounding this spring was not watertight and allowed surface wash t enter, and the area in the immediate vicinity of the springs was open t the cattle grazing on the land where the springs were located. The pipe lin leading from the spring to the reservoir emptied into a wooden barrel alon the path above the caretaker's house, from which point the water flowe to the reservoir through another pipe line. At the time of the inspectio this second pipe line was broken and the water was flowing from the barr to the reservoir over the surface of the ground. The Chilson Hill reservoi water is first passed through a bed of coke before entering the mains lea ing to the village. The watershed tributary to the Chilson Hill supply is som 4.5 square miles in area and consists of a small populated farming distri with a resident population of 16.6 per square mile. Opportunities for indire pollution of the water supply streams by surface wash from the vicinit of farm houses, barns, and cultivated fields are numerous. In one case ther is danger of surface wash from a barnyard about 150 feet from the broo flowing directly into the stream. The houses located on the south side the brook where the banks are steep are also sources of possible contaminatio

With reference to the Lake George supply, the supply is subject, a pointed out in the previous reports, to the continuous as well as intermitte pollution from nearby dwellings and boat houses. The sanitary conditio in Alexandria which lies just outside the southerly corporate limits of th village, and below which the intake of the supply is located are decided bad, and constitute a serious potential danger to the water supply. Ther is no sewerage system in Alexandria, and the drainage leads directly towa the lake. Drainage from houses on the street parallel to the lake collects i the gutters and also eventually finds it way into the lake. At Reed's garag however, the privy was said to have been removed. A toilet in the adjace house is connected with a cesspool said to be located in the rear of th lot which abuts on the lake.

In a report on an inspection of the supply dated October 17, 1921, th following conclusions were made:

1. That the authorities in charge of the water supply have not carrie out the previous recommendations of this Department.

2. That as pointed out in the above report, opportunities for serio and potentially dangerous contamination of both the Chilson Hill a Lake George supply remain, and in their present state they cannot considered safe for domestic consumption without some form purification.

It was therefore recommended:

1. That the authorities in charge of the water supply carry out once such of our previous recommendations as have not yet been act upon.

2. That the auxiliary spring at Chilson Hill be improved as outlined in the body of the report on the inspection:

(a) By raising the curb to exclude surface wash.

(b) By enclosing with a tight fence to prevent trespassers or cattle from coming in the vicinity and causing any possible pollution.

(c) By the construction of drainage ditches to divert surface wash from the vicinity of the spring.

(d) By replacing the broken pipe line leading from the spring to the reservoir and eliminating the wooden barrel receiving the spring water before it enters the reservoir.

3. That the caretaker's privy at the Chilson Hill reservoir be removed to a point not less than two hundred feet from the reservoir, and the contents frequently removed and disposed of at a point remote from the reservoir, stream and springs in order that there may be no opportunity for pollution of the supply.

4. That the authorities in charge of the public water supply endeavor to divert barn and house drainage from the Chilson Hill reservoir feeders and should any trouble be experienced in carrying out the above recommendations the authorities should make application to this Department for the enactment of rules and regulations for the sanitary protection of the public water supply.

5. That the Lake George supply be abandoned or that the intake be extended to a point above Alexandria and provide at least for the chlorination of this supply whenever used.

6. That in view of the present unsatisfactory conditions of the water supply of Ticonderoga, necessitating the immediate improvement of the supply and in view of the intricate and detailed questions involved, the village should employ a competent sanitary engineer to study the situation and determine the most feasible and economical means for providing a supply which will be both adequate in quantity and of a satisfactory sanitary quality at all times.

TULLY

A reinspection of the public water supply of the village of Tully, Onondaga county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on December 13, 1920. A previous inspection of this supply was made by this Division in the year 1916 and the report thereon published in the Annual Report of the Department for the year 1917.

Tully is located about 22 miles south of Syracuse and has a population of 600, of which 85 per cent is served by the public water supply. The waterworks are owned and operated by the village under the direction of the water and light board, of which Mr. R. H. Wheeler is president. The water supply is derived from a dug well located in the eastern part of the village from which it is pumped directly into the distribution system.

The sanitary conditions surrounding the well are not entirely satisfactory. There is one house within 100 feet of the well. The house nearest the well had a privy which was in a very insanitary condition at the time of the inspection. Since the previous inspection the well has been concreted and better protected from surface wash and a new building constructed to house it. The previous recommendations of the Department in regard to development and fencing of the new well, have not been carried out.

It was therefore recommended in a report dated February 1, 1921:

1. That the authorities in charge of the public water supply develop a new supply at a point not less than 500 feet east of the present well.

2. That an area at least 200 feet in diameter be fenced in around the well and that trespassing within this enclosure be forbidden.

3. That, pending the development of a new supply, a chlorinating apparatus be installed to sterilize the present supply.

4. That frequent tests be made of the chlorinated water for exc chlorine in accordance with the directions issued by this Department a the rate of application of the chlorine regulated in accordance with t results of these tests.

TUXEDO PARK

A reinspection of the sanitary condition of the public water supply Tuxedo Park was made by Mr. W. J. Erickson, sanitary engineer in tl Department, on December 10, 1920. Previous inspections were made of tl supply in 1908 and 1915 and are reported upon in the Annual Reports this Department for the respective years.

Tuxedo Park is a residential park surrounding Tuxedo lake, which l in the southerly point of Orange county, near the Rockland county li The small community to the east of the park is known as the village. T park has a summer population of about 2,700 which is reduced to appro mately 300 in winter. The village has a permanent population of abo 1,200. The park is controlled by the Tuxedo Park Association. It is pr vided by a private sewer system which discharges the sewage into a bran of the Ramapo river after treatment. The disposal plant consists of septic tank, coke and sand filters. The sewers in the vicinity of Tuxe lake, which is the source of the water supply, are of cast-iron laid with le joints. The water supply is controlled by the Tuxedo Water Company, f which Mr. Lorillard is president. The supply is delivered to the consume through two systems, namely, the park system and the village system. T supply for the park system is delivered by pumping from the lake throu the distribution system to a standpipe. An auxiliary pump has be installed to supply the park property on the west side of the lake. The co sumption averages about 1,500,000 gallons in summer, but due to the small population in winter the consumption falls considerably during these montl The village system is supplied by gravity from the lake to the distributi system. The consumption in the village is not definitely known but probably about 500,000 gallons a day.

The intake for the village supply is located at the northern or lower e of the lake at the dam. The intake extends 300 feet into the lake at depth of 10 or 15 feet. The water is siphoned over the dam and then flows by gravity to the village. The main pumping station for the Pa system is located on the eastern shore of the lake. The intake extends feet out into the lake, where the water is about 35 feet deep and is held trestles at about 10 feet below the surface. An auxiliary intake has be laid at the dam near the village intake extending into the lake for a distan of 400 feet. To provide water for two residences in the higher area in t western part of the park an auxiliary intake has been extended into the la for 300 feet in the western part of the lake. The water is pumped into small concrete reservoir.

The lake has an area of about 288 acres and a watershed of about 4. square miles. The population on the watershed is about 700 which increased to about 1,700 during the day by laborers and gardeners on t estates. The resident population is therefore about 150 and the tempora population about 300 per square mile. Approximately 70 per cent of t area tributary to the lake is wooded. The major portion of the populat portion of the park is to the east and north of the lake. The park is la out in large estates and the houses are considerably scattered and few a near the lake. All houses are connected with the private sewer system a no sewer is nearer than 30 feet of the lake. These sewers are constructed cast-iron pipe. Unless there should be an overflow from these sewers, due clogging or breakage, there should be no danger of pollution of the supp from this source.

The roads skirt the lake shores at several points, especially at the base Eagle mountain. It is said that these roads are swept daily and that tl sweepings are carried away to a safe point of disposal. The rules are ve strict as to use of the lake. No bathing is allowed under the penalty of a heavy fine. Fishing is also regulated to certain zones and permitted only to the owners and their guests.

In a report on an inspection of the supply dated January 25, 1921, the following conclusions were made:

1. That the water supply of Tuxedo Park is subject to intermittent contamination incidental to operation of workmen in the fields, from surface runoff from these fields and roads along the lake, and from fishermen and boatmen on the lake.
2. That the analyses of the samples of water taken at the time of the inspection showed the presence of some active contamination.

It was therefore recommended:

1. That the water company continue to exercise strict supervision of the supply at all times in order to assure a water of satisfactory sanitary quality.
2. That the authorities install and efficiently operate a suitable apparatus for the sterilization of the supply with liquid chlorine.

UNADILLA

A reinspection of the public water supply of the village of Unadilla, Otsego county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on March 2, 1921. A previous inspection of the supply was made by this Division in the year 1916 and a report thereon published in the Annual Report of the Department for that year.

Unadilla is located about 17 miles southwest of Oneonta and has a population of 1,200, of which 85 per cent are served by the public water supply. The waterworks are owned and operated by the village under the control of the water board of which Dr. S. J. White is president.

The water supply is derived from Kilkenny springs about a mile north of the village and from Martin brook, about 2 miles north of the village. An auxiliary supply is derived from wells northwest of the village. The two main supplies are entirely separate, serving different sections of the village, although either one may be made to serve the entire village. The water is delivered by gravity to the distribution system.

The Kilkenny supply is derived from 7 springs located near a hill of forested, uninhabited land. The Martin brook supply has a drainage area above the intake of about 2 square miles of agricultural and forested land. There are 12 farm houses on the watershed of the brook. Although the sanitary conditions on the watershed were in general satisfactory, there is always a possibility of indirect pollution of the supply from the farm houses and chance or wilful contamination from trespassers. The 4 driven wells which comprise the auxiliary supply are located near a built-up section of the village. There is a cesspool within 200 feet south of the well and 5 privies within 500 feet of the well. The other 3 wells are located in an open field away from inhabitation, the surrounding land being owned by the village.

The recommendations of this Department in regard to sterilizing the Kilkenny and Martin brook supplies with liquid chlorine and the abandonment of one of the auxiliary wells, have not been carried out.

In a report dated March 29, 1921, on an inspection of the supply the following recommendations were made:

1. That the present strict supervision of the watershed be maintained and that all sources of pollution be removed.
2. That the north wall of the lower reservoir of the Kilkenny supply be extended about a foot above the ground to exclude surface wash.
3. That the drainage from the highway in the Martin brook watershed be diverted so as not to enter the public water supply.

4. That suitable apparatus be installed for sterilizing the supply wit chlorine. preferably at some central point, and that chlorine be applie in the water in proper quantities at all times.

5. That frequent tests be made of the chlorinated water for exce chlorine in accordance with the directions issued by this Departme and the rate of application of the chlorine regulated in accordance wit the results of these tests.

UNIONVILLE

A reinspection of the public water supply of the village of Unionvil was made by Mr. W. J. Erickson, sanitary inspector in this Department, o May 12, 1921. Previous inspections were made of this supply in 1908 ar 1915, the reports on which are published in the Annual Reports of th Department for the respective years.

Unionville is an incorporated village with about 400 inhabitants located i the southwestern part of Orange county. It is 12 miles from Middletow about ½ mile from the New Jersey border. The public water supply is owne by the Unionville Water Works Company of which Dr. E. A. Nugent is pres dent and Mr. Floyd Terry superintendent. The village is not provided wit a public sewer system. The supply is derived from two driven wells locat south of the village. A small covered reservoir has been constructed over th wells from which the water is pumped through the distribution system to th storage reservoir. The consumption is estimated to be about 40,000 gallo per day. The reservoir is on the side of the hill in the eastern part of th village. It is formed by two dams across a small gully in the hil side. The wells are drilled in the built up section of the village in a lo flat area. There are ten or more houses within 500 feet of the wells, th nearest being about 200 feet away. A stream emptying into the Wallkill flo alongside of a street on the opposite side of which there is a row of hous and passes about 20 feet from the well. Several house drains empty int this stream as does the exhaust from the silk mill located above the well The stream passes under the railroad embankment below the wells in a culve which is too small to adequately carry off the storm of the stream and caus a flooding of the area in which the wells are located.

The mill of the American Silk Label Manufacturing Co., is located abou 150 feet from the wells. The sewage is taken care of by chemical toilets whic discharge into two-150 gallon iron tanks. These tanks are emptied and th contents drawn away as often as necessary. The plant is to be enlarged b the construction of new buildings so as to accommodate about 200 employee As trouble is being experienced from the present method of disposal, a ne system is desired. On account of the impervious nature of the soil it is im practicable to dispose of it by leaching cesspools or subsurface irrigation an discharging it into the stream except in a completely treated state. The are above the upper reservoir has been fenced and drainage ditches to divert su face wash from cultivated fields above the reservoir, have been constructe Several small springs issue from the ground inside of the enclosure and ar used to augment the supply. Algæ growths were developing in the reservoi especially along the edges.

In a report on an inspection of the supply dated June 6, 1921, the followin conclusions were made:

1. That the location of the wells in a comparatively thickly settle village is very unsatisfactory.

2. That the ground water tributaries to the wells are highly pollute from the numerous privies and cesspools in the village and that ther is no assurance that these wells will not at some time become activel and dangerously contaminated.

3. That the wells are further subject to serious contamination from th small polluted stream passing near them at times of high water when i is possible that the creek water seeps through the porous concrete block

4. That, while the upper reservoir is protected from direct surface wash, the area above the reservoir should not be used for pasturage and should not be fertilized with any manure as such action could probably effect the sanitary quality of the springs.
5. That the water supply is depreciated by the presence of heavy algæ in the reservoir.

It was therefore recommended:

1. That in view of the polluted condition of the ground water tributary to the well supply, that the water company secure a new supply of unquestionable sanitary quality and adequate in quantity.
2. That pending the development of a new supply, the present supply be sterilized with a liquid chlorine.

UTICA

A reinspection of the public water supply furnished by the Consolidated Water company of Utica to the city of Utica and a number of villages and towns in Oneida county, was made on July 20, 1921, by Mr. A. I. Howd of this Division accompanied by Mr. George C. Hodges, biologist for the company. A previous investigation of this supply was made on May 27 and 28, 1918, and the report upon the investigation was published in the Annual Report of the Department for that year.

The city of Utica, which has a population of 94,156 according to the census of 1920, is located in Oneida county in the central part of the State.

The water supply of the Consolidated Water Company of Utica is derived from a number of sources, but for simplicity may be combined into two groups, a northern supply, which furnishes about 75 per cent of the water used and a southern supply, which furnishes the remainder, or about 25 per cent of the water used in the city and neighboring villages. The northern supply is derived principally from the west Canada creek, at times augmented by water from Reels creek. The southern supply is derived from a number of small streams south of the city.

In addition to furnishing the city of Utica with water, the Consolidated Water Company of Utica supplies the villages of Oriskany, New Hartford, Whitesboro and Yorkville, the towns of New Hartford and Whitestown, part of the town of Deerfield, and the unincorporated village of New York Mills (which is in the towns of New Hartford and Whitestown). The total population served with water by the company is about 125,000. In addition to the water furnished for domestic consumption, water is supplied to a number of industrial plants and to several railroads, namely, the New York Central, the Delaware. Lackawamna and Western, the New York, Ontario and Western and the West Shore and is used by them in filling tanks on coaches and diners for drinking purposes, as well as for boiler and other purposes. The average total daily water consumption for 1920, according to the records of the company, was 11.6 million gallons, of which 9 million gallons was obtained from the northern supply and 2.6 million gallons from the southern supply. The maximum daily water consumption occurred during June and was 12.4 million gallons while the minimum daily water consumption occurred during December and was 9.8 million gallons.

The northern supply is taken from the West Canada creek at Hinckley, about 17 miles north of Utica, where a dam has been constructed across the creek forming a reservoir which has a capacity of 25,500 million gallons and a water surface area of 2,820 acres. The water flows from the reservoir by gravity through about 12 miles of 24-inch pipe to the Marcy standpipe where it is diverted to two distributing reservoirs, the Marcy reservoir about 2 miles below and the Bacot (Deerfield) reservoir about 4 miles below the standpipe. Water from an intake in Reels creek is also discharged into the Bacot reservoir. Both the Marcy and the Bacot reservoirs are open and formed by earth embankments, the inner slopes of which are paved. The

Marcy reservoir has a capacity of 15 million gallons and the Bacot reservoi has a capacity of 106.5 million gallons. The water is chlorinated and metere as it leaves each of the reservoirs. The supply from the Marcy reservoi enters the northwestern part of the city about 4 miles below the reservoi and the supply from the Bacot reservoir enters the city at Genesee stree about 3 miles below the latter reservoir.

The system comprising the southern supply consists principally of a numbe of impounding and distributing reservoirs. A dam constructed across small stream about 4 miles south of the city impounds the water and form what is known as reservoir No. 1. This reservoir which is also fed b springs, furnishes water directly to the New Hartford district. Reservoi Nos. 2, 4, and 5 are located close to each other near the southeastern edg of the city. An intake on Starch Factory creek furnishes water to reservoir Nos. 2 and 5 while No. 4 impounds a small stream. The water from No. and No. 5 may be pumped into No. 4. The water company is contemplatin certain changes and additions to their distribution system whereby the entir population served with water may be furnished with water solely from th northern supply. The southern supply will then be retained as an emergenc auxiliary supply.

The several water supplies which reach the general distribution system ar treated with liquid chlorine. A chlorination and meter house is located a the foot of the Bacot reservoir. The building is constructed of tile and ma be heated. The chlorinator now in use was installed about two years ago was manufactured by Wallace & Tiernan Company, Inc., and is of the automatic control dry feed type. The Venturi meter recorded at the time o the inspection a flow of water at the rate of 6.1 million gallons daily, an the manometer on the chlorinator indicated the application of chlorine at th rate of 25½ pounds per 24 hours, or about 0.50 parts of chlorine per millio parts of water.

A chlorination and meter house is also located below reservoirs Nos. 2, and 5. The Venturi meter on the line from reservoir No. 1 showed a flow a the rate of 1.25 million gallons at the time of the inspection, while the Venturi on the discharge from reservoirs Nos. 2, 4 and 5 showed a flow at th rate of 1.2 million gallons. The especially designed chlorinator to treat th water from reservoirs Nos. 2, 4 and 5, consisting of a large concrete solutio tank, has been replaced by an automatic control dry feed chlorinator manufactured by Wallace & Tiernan Company, Inc. The scales which are provide for weighing the chlorine cylinders were being repaired and out of servic The small glass tube in the manometer had apparently become loosened an dropped to the bottom of the manometer, which was not recording at the tim of the inspection. Owing to severe storms preceding and during the inspectio it was impossible, due to the condition of the roads, to visit the Marcy reservoir and reservoir No. 1 and their chlorination plants.

Rules and regulations for the protection from contamination of the publi water supply of Utica were enacted by this Department in 1907. The rule apply to the watershed of West Canada creek above the dam at Hinckley an the watershed and reservoirs of Reels creek, on the northern supply, and t Ballou creek, and Starch Factory creek watersheds and reservoirs, on th southern supply. The West Canada creek above the intake for the Utic water supply at Hinckley has a watershed area of about 375 square mile The watershed is quite heavily wooded and sparsely populated, the populatio on the shed being estimated at about 1,500, or 4 per square mile. The northern watershed is patrolled in sections for about 20 miles above the intake, an the southern watersheds are patrolled continually. Tight containers are provided by the water company for privies and for slops from properties nea streams on the watersheds, and the company attends to emptying the containers and disposing of the contents at remote places so as not to pollut the supply.

The last previous report of this Department recommended that the wate company carefully patrol the watersheds of various supplies and vigorousl enforce the rules and regulations; that the supplies be at all times efficientl sterilized; that a more satisfactory apparatus be installed at the Marcy rese voir and duplicate equipment be provided at the New Hartford supply; and that the action already started toward the protection of the water in the distribution mains from pollution through cross-connections be continued either by the complete severance of the auxiliary mill supplies, or by the installation of properly designed double check valves and gates located in accessible manholes, and, in the case of double check valve installations, regular and frequent inspections be made to determine the satisfactory operation of these safeguards.

As a result of the present inspection, it appears that the recommendations of the previous report in regard to patrolling watersheds, enforcing rules and installing a more satisfactory sterilization apparatus at the Marcy reservoir, have been carried out. As far as could be learned, no further action has been taken, however, by the city or water company to require either the complete severance of the auxiliary mill supplies or the installation of properly designed double check valves and gates. No further inspections have been made of the cross-connections between the city mains and auxiliary supplies since the inspection of Marmaduke Owens for the Consolidated Water Company on December 10, 1917.

The matter of permitting only proper and safe cross-connections between the public water supply mains and those of auxiliary supplies for industrial plants is of the utmost importance. Immediate action should be taken to require a severance of all improper and unsatisfactory connections, or the installation of properly designed double check valves and gates located in readily accessible manholes outside of the buildings and near the municipal mains. The installation should be of the type approved by this Department or a type fully equivalent thereto. A test should be made at monthly intervals of the tightness of the check valves, and at least once each year the bonnets of the check valves should be removed and the checks and their bearing seats carefully cleaned. In this connection also, all existing interior service lines should be disconnected from such fire lines running from sprinkler or hydrant feeders and taken off from the public mains on the city side of the check valves.

In a report upon the supply dated December 19, 1921, it was recommended:

1. That the Consolidated Water Company continue their careful supervision over the watersheds of the streams from which the water supply is derived, and enforce the rules and regulations for their protection.
2. That careful attention be given to the maintenance of the various chlorination apparatuses, so that they may be operated effectively and efficiently at all times.
3. That the water company consider the installation of duplicate chlorination apparatuses at all points where chlorine is applied to the water, to preclude the possibility of any interruptions in the chlorination of the supply.
4. That an ample supply of chlorine be kept on hand at all times.
5. That, in order to eliminate the possibility of contamination of the public water supply through cross-connection with auxiliary industrial supplies, such as occurred in 1917, the Consolidated Water Company require either a complete severance from their mains of the auxiliary industrial water supply from polluted sources, or the installation of properly designed double check valves and gates of the type approved by this Department or a type fully equivalent thereto.
6. That the water company institute a regular systematic and frequent period of inspection of the check valves in order to insure their proper operation at all times.
7. That the Consolidated Water Company of Utica carry out as soon as possible the proposed changes in their distribution system whereby the entire population served with water may be furnished with water from the northern supply, the southern supply to be retained as an emergency supply.

WALDEN

A reinspection of the sanitary condition of the public water supply of the village of Walden was made by Mr. W. J. Erickson, sanitary inspector, on March 15, 1921.

Previous inspections of this supply were made in 1909, 1913 and 1915, the reports upon which are published in the Annual Reports of this Department for the respective years.

The village of Walden is located in the northern part of Orange county, 10 miles northwest of Newburgh. Practically all of the village is served by a comprehensive sewer system, which empties through five outlets into the Wallkill river. Of the 5,100 inhabitants of the village, about 4,700 use the public water supply, which is owned and operated by the village under the direction of the board of water commissioners, of which Mr. E. B. Wooley is president. The water is derived from 9 driven wells, located about a mile south of the village, and pumped into a distribution system, consisting of about 10 miles of mains. The average daily consumption is 114,577 gallons. The wells near the center of the village have been abandoned, and the supply is derived solely from those outside of the village. These wells are located in a level area southwest of the village. The watershed tributary to the wells is about ¾ of a square mile in area and is sparsely populated. The village owns considerable land around the wells, which is unoccupied and fenced. The soil is largely of a gravelly nature underlain with a layer of blue clay. The water-bearing gravel from which the water is derived is under this clay strata. The wells are 6 inches in diameter and driven to a depth of 150 feet. The water is siphoned from the wells into a circular suction well. Each well is protected by a concrete box, which prevents the surface water from reaching the well casing. There are no sources of pollution in the vicinity of the wells.

In a report on an inspection of the supply dated March 25, 1921, the following conclusions were made:

1. That the public water supply of Walden, as derived from the wells located outside of the village, is apparently of satisfactory sanitary quality.
2. That the village has taken commendable action in having the former recommendations of the Department carried out.

It was recommended that the board of water commissioners continue their careful supervision of the water supply.

WARWICK

A reinspection of the public water supply of the village of Warwick, Orange county, N. Y., was made by Mr. N. H. Baier, sanitary inspector of this Department, on April 25, 1921. A previous inspection of the supply was made in 1913 and the report thereon published in the 34th Annual Report of the Department.

Warwick is located about 29 miles southwest of the city of Newburgh, and has a population of 2,800, 95 per cent of which are served by water from the public water supply. The waterworks are owned and operated by the village under the control of the board of trustees, of which Mr. John M. Demming is president. The water supply is derived from a small brook impounded in 3 reservoirs about 2 miles south of the village from which it flows by gravity to the village.

The stream above the reservoirs has a drainage area of about 1½ square miles of steeply, sloping, cultivated and forested land. The sanitary conditions on the shed are in general satisfactory, there being no dwellings from which human pollution may reach the supply. Horses and cattle are watered in the upper branches of the brook. The watershed is regularly inspected about twice a month. It appeared at the time of the inspection that fishing was prohibited in the reservoir. The reservoirs contained considerable vegetation and it was learned that fishy tastes are noticeable in the water at times.

The previous recommendations of this Department in regard to filling in cesspools on the Hitchcock farm, the provision of watering troughs or small ditches for cattle and the enactment of rules and regulations for the protection of the watershed have been carried out.

It was, therefore, recommended in a report dated May 9, 1921, on an inspection of the supply:

> 1. That the watershed be regularly inspected and the rules and regulations enacted by this Department strictly enforced, including those prohibiting fishing in the reservoirs.
>
> 2. That if it is found impracticable to obtain a water of satisfactory quality by controlling the area tributary to the reservoirs and rigidly enforcing the rules and regulations, apparatus for the sterilization of the supply be installed and put in operation.
>
> 3. That the reservoirs be, as far as possible, cleaned of vegetation and that copper sulphate be applied in proper quantity and under careful supervision at the first appearance of algæ growths to prevent their growth and the occurrence of tastes and odors.

WARD LANE

An inspection of the public water supply of the Ward Lane, Colonie, Albany county, N. Y., was made by Mr. W. J. Erickson, sanitary inspector, on June 8, 1921. The Ward Lane Water company, of which Mr. John Keeler is president, serves a small section of the town of Colonie adjacent to the city of Albany. The supply is delivered to about 7 or 8 houses of Ward Lane, Mid City park and a few industrial concerns, among them the Federal Signal company and the Simmons Machine company.

The supply is derived from a reservoir formed by a dam across a small brook about a half mile west of the main Albany-Troy highway just north of the Albany city line. The dam which is constructed of earth with a concrete core is about 150 feet wide and 30 feet high and forms a reservoir about 150 feet wide and 400 feet long. The reservoir though shallow near the shore is deep at the middle. Though the water was clear some algæ and weeds were observed near the shore. The watershed tributary to the reservoir is about three-quarters of a square mile in area. The summer residence of John Keeler is located south of the reservoir. This place is maintained in a satisfactory condition and the cesspool is located below the reservoir. There are in all about 10 houses on the watershed and a total population of about 50 or 60 per square mile. Most of these houses are on the upper part of the shed on the Loudonville road. The major part of the watershed is used for pasturage. Two main highways out of Albany also pass across the watershed, besides the possibility of contamination from a populated watershed, from pasture land and road wash.

In a report on an inspection of the supply dated July 11, 1921, the following conclusion was made:

> That the water supply of the Ward Lane Water company is subject to contamination by drainage from a populated watershed, from pasture lands along the stream and from 2 roads crossing it and also to incidental contamination by visitors on the shed.

It was therefore recommended that the water company either install a modern purification plant or abandon the present supply and develop a new supply of satisfactory sanitary quality.

WATERLOO

A reinspection of the public water supply of the village of Waterloo, was made by Mr. Earl Devendorf, a representative of this Department, on October 25 and 26, 1921, with special reference to the question of the occurrence of tastes and odors in the public water supply. Previous inspections of the supply have been made by the Division in 1909, 1915 and 1918 and the reports thereon may be found in the Annual Reports of the Department for the respective years.

Waterloo is an incorporated village with a population of some 4,500 inhabitants and is located in the northern part of Seneca county on the Seneca river. The waterworks are owned by the Waterloo Water Works company, of which Mr. William A. Wilcox is president. The water supply is derived from the Seneca river which has in recent years been dredged and improved by the State of New York and is now used as a part of the system of the new Barge canal. The intake of the water supply formerly was laid along the Seneca river to a point above Black brook but it was stated that at the time the Barge canal was constructed and the river dredged the intake pipe was disturbed and put out of service. The intake is now located near the westerly limits of the village from which the water flows by gravity into a sedimentation basin provided with baffles and is normally treated with alum prior to sedimentation. From the sedimentation basin the water flows to a collecting well from which the water is pumped to the 2 Roberts' pressure mechanical filters before being discharged into the distribution system. The excess over the consumption is stored in an elevated steel storage tank near the pumping station. The average daily water consumption varies from a minimum of 330,000 to a maximum of 650,000 gallons per day corresponding to a daily per capita consumption of 81 to 150 gallons respectively. Storage is provided in an elevated steel tank about 150 feet high having a capacity of some 200,000 gallons. In addition to the filtration the water is normally sterilized by means of liquid chlorine applied through a Wallace and Tiernan manually controlled solution type chlorinator. In general the details of the waterworks system remain as described in the previous report.

With further reference to the operation of the purification plant treating the public water supply it was observed at the time of the inspection that several of the baffles in the sedimentation basin had been displaced. These should be erected again in order to prevent any cross currents and inadequate mixing and coagulation. The operator stated that normally the amount of alum used varied from 40 to 60 pounds per day depending upon the physical character of the raw water. No alum, however, was being used, at the time of the inspection as the operator stated they had only a very small amount on hand and the character of the water was such that in his opinion the alum was not necessary. It appears desirable that the use of the alum be made continuous and that it be applied at the rate of at least ½ grain per gallon at times when the raw water is relatively clear which rate should be increased at times of heavy turbidity in an amount sufficient to provide a suitable floc, and the removal of turbidity in order to deliver a relatively clear water at the end of the sedimentation period. The company should also clean the coagulation basin at least once a year. It was stated that it had been cleaned about one year ago.

Normally the supply is sterilized after filtration by applying liquid chlorine to the water at a rate of approximately 2 pounds per day. With the estimated rates of consumption of 430,000 gallons per day, this is equal to a rate of application of approximately 0.5 parts per million. For this purpose two Wallace & Tiernan solution type chlorinators are provided in order that a spare chlorinator may be available for emergency use and lessen the likelihood of any interruption in the application of chlorine. At the time of the inspection, however, no chlorine was being applied to the water and our engineer was informed by the operator that the last tank of chlorine had been emptied that morning and the operation of the chlorination plant shut down.

From the records of the water company it is estimated that the total pumpage from January 1 to October 25, 1921, amounted to some 126,000,000 gallons during which time approximately 300 pounds of chlorine were applied. This corresponds to an average rate of application of 0.28 parts per million. This would appear to verify records giving the daily rate of application of chlorine varying from 1 to 2 pounds per day throughout the above period. While it is apparent from the above data that the water company had been continuously applying chlorine throughout the year until the date of the inspection, it is nevertheless, regrettable that there would be any interruption in service even after the company had gone to the expense of purchasing a duplicate chlorinator in order to minimize the danger of any such interruption. The company should not allow the supply of chlorine to become depleted to such an extent before ordering another cylinder. In fact, a good policy would be to always have one full cylinder on hand.

From the record of the amount of alum purchased and the total pumpage, it would appear that alum has been applied at an average rate of approximately 0.4 grains per gallon. Based upon the estimated consumption given above the maximum rate of filtration is approximately 70,000,000 gallons per acre per day.

As noted above, the intake is located in the Seneca river at a point some 3 miles from the outlet of Seneca lake and some 2½ miles below the point where the old canal enters the river. The city of Geneva discharges the sewage of the city untreated into Seneca lake through 3 main outfalls known as the Marsh creek, Castle creek and Mile Point sewers, at points from 1 to 1½ miles from the outlet of the lake. These sewers empty into the lake. The Marsh creek sewer is a 30-inch vitrified tile sewer provided with a cast iron outfall discharging into the lake in some 6 to 10 feet of water about 150 feet from shore. There are said to be some 5,000 people served by this sewer. The Castle creek sewer is also a 30-inch sewer discharging into the lake in some 20 or 25 feet of water at a point about 700 feet from shore. There are said to be some 8,000 or 10,000 people connected to this sewer. The Mile Point sewer is a 15-inch or 18-inch sewer discharging into the lake some 400 feet from shore in 15 feet of water. It is stated that there are approximately 1,000 people served by this sewer.

From the authorities in charge of the Geneva waterworks it was learned that the daily per capita water consumption is approximately 81 gallons in addition to which there is contributed to the sewers the flow from flush tanks amounting to a total of some 35,000,000 gallons per year plus the natural infiltration in the sewers. The sewage of the city being discharged into the lake at the opposite side of the northern end of the lake from the outlet, it would appear that by the process of sedimentation and bio-chemical action, the sewage is fairly well purified before reaching the outlet of the lake in the Seneca river except under unfavorable wind and weather conditions when some pollution from the sewers would in all probability, be carried into the mouth of the Seneca river and thence to the point of intake of the Waterloo Water Company. For this reason it is important that the utmost care should be taken to insure the continuous, careful and efficient operation of the purification plant in order that the water supply furnished the citizens of Waterloo may be of a safe sanitary quality at all times.

The old canal originally extended from the lake near the city of Geneva to the present Seneca river at a point about ¼ mile from the lake paralleling the northern shore of the lake. Since the installation of the new Barge canal system, however, this canal has been practically abandoned. The wastes from the Empire Coke and Gas Company plant near Geneva are discharged into the old canal and it has been alleged that the objectionable tastes and odors in the water have been due in part at least to the presence of these wastes in the canal which, under certain wind conditions, are carried into the Seneca river and thence to the waterworks intake.

At the time of the inspection the following information on the operation of the gas company plant was obtained: The plant is now producing 1,600,000 to 1,700,000 cubic feet of illuminating gas daily which is pumped from the plant through a force main at a pressure of 35 pounds per squar inch to the surrounding cities and villages supplied by the company. Th water supply for the plant is taken from the Barge canal and pumped b a new electrically operated pump having a rated capacity of 1,000 gallon per minute which is said, however, to be throttled down to deliver approximately 700 gallons per minute and is operating 24 hours each day.

The wastes from the ammonia condenser, light oil building and scrubbe for the blue gas all pass through a treatment plant consisting of two settlin tanks some 80 feet in length by 10 feet in width and 5 feet in depth belo the flow line. These tanks are filled with coke through which the waste are passed. One tank is used while the other is being cleaned and th coke replaced. At the time of the inspection the north tank was out o service and the coke appeared to have been recently replaced. The sout tank was delivering an effluent that was free from oil although it had dark color. The amount of wastes being discharged here was estimated a some 600 gallons per minute at the time of the inspection.

The remaining wastes from the plant consist of surface drainage, quenching water and effluent of settling tank and strainer treating the domesti sewage. It was stated that some 32 charges of coke are quenched per 2 hours instead of a maximum said to be as high as 50 charges per 24 hour in the past. On the average some 2,000 gallons of water are used in quenching each charge of coke. This amounts to an average of some 45 gallon per minute and, together with the 600 gallons per minute, passed through the treatment plant mentioned above, equals nearly 700 gallons per minute the total amount of water pumped as estimated. It was learned that th oil from the two oil recovery tanks is removed every day and placed i barrels.

At the time of the inspection the points of discharge of the wastes fro the plant into the old canal were inspected, the physical character of th effluent noted and samples collected and sent to the Division of Laboratorie and Research for analyses.

At the time of the inspection the wastes being discharged from outle No. 1, shown on the attached map, consisting of the surface drainage quenching waters and effluent from the septic tanks treating the domesti sewage, were found to be somewhat warm to the touch and to have considerable color although no large amount of solids in suspension wer observed. No distinct odor was observed.

The wastes being discharged from the outlet indicated as No. 2 on th attached map, being the effluent from the treatment plant treating th wastes from the ammonia condensers and light oil building, were observe to be very dark colored, fairly warm, to have a tarry odor and a sligh amount of oil was visible. From time to time a small amount of filamentou aquatic growths was observed to pass down the stream.

The wastes from the submerged vitrified sewer outlet, 75 feet west o outlet No. 1, were observed and had a tarry odor with some spots of oi rising to the surface and a very dark orange color. The amount o wastes flowing from this outlet was relatively small and it was stated tha this consisted of an abandoned waterworks intake pipe.

As stated above, the old canal runs from the city of Geneva at the northwesterly end of Seneca lake to the present Barge canal near the northeasterly end of Seneca lake. The amount of flow depends largely upo the direction of the wind, a west or southwest wind tending to cause th above mentioned wastes to be discharged into the barge canal. It is state both by members of the water company and by the health officer and business men's representatives that the odors and tastes in the water have i the past been intermittent and more noticeable when the wind was in th west or southwest which would tend to corroborate the above and indicat that there is some connection between the disagreeable tastes and odors i the water supply and the presence of wastes being dischargd from the cok plant. At the time of the inspection deposits of oil were observed alon the shore at the outlet of the old canal near the point where it emptie into the Barge canal, giving every indication that at certain times o unfavorable wind and weather conditions together with the probable inefficient operation of the disposal works treating the wastes of the coke plant, there is a considerable amount of oil and coal tar wastes being carried to the point of intake by the more positive and swifter current in the river. At the time of the inspection and collections of samples the wind was blowing from the north and there appeared to be little or no wastes reaching the Seneca river from the old Seneca canal.

The possibility, however, of the production of objectionable tastes and odors from the discharge into the canal of wastes from the plant of the Empire Gas and Coke Company should be given serious consideration. The occurrence of objectionable tastes and odors has been found in other places to have been due to the discharge of coal tar wastes into waters used as sources of public water supplies, especially in cases where the supplies have been treated with chlorine. The chlorine added to waters containing such wastes appears to form a compound which has a carbolic-like taste and odor. The most noticeable examples of this have occurred in the cities of Milwaukee, Toronto and Cleveland. From such observations as it was possible to make at the time of the recent inspection at Waterloo, however, it cannot be definitely stated as to what extent the tastes and odors which seem to occur occasionally in the Waterloo supply are due to the discharge into the canal of wastes from the Empire Gas and Coke Company's plant.

It will be necessary for this Department to make further investigation before this question can be definitely determined. In this connection the village authorities and the water company could aid us considerably in making daily observations of direction and velocity of winds in order to determine the direction and velocity of the wind at times when these objectionable tastes and odors occur.

There are two small surface water streams entering the river above the present intake and below the outlet of the old Seneca canal near the lake. One is known as Black creek and the other as Kendig creek and both drain a somewhat sparsely populated and relatively level watershed. These streams are subject to pollution from not alone the residents on the watersheds but also to surface wash from the highways and cultivated fields and to accidental, incidental or wilful pollution from persons crossing the watershed area. In view, however, of the fact that the water company has a treatment plant which, if continuously and properly operated, should produce a water of a safe sanitary quality, it does not appear desirable to extend the intake above the point of outlet of the two above mentioned streams.

At the time of the inspection the Business Men's Association furnished the Department with a report made and results of bacteriological examination of samples collected by the North Public Health Bureau of 30 Church street, New York city. No statement is made in the report as to the period which elapsed between the time of collection of sample and the plating, and for this reason we cannot draw any definite conclusion as to the significance of the results of the total counts. From the results of lactose broth fermentation, furthermore, no great dependence can be given due to the fact that they constitute presumptive tests only and have not been confirmed, which procedure the experience of the Department has shown to be necessary, especially with a chlorinated water, as some gas producing forms of bacteria are not removed in the sterilization by means of liquid chlorine while organisms inhabiting the intestinal tract of man and animal are effectively removed. In the report it is stated that the "offensive tastes and odors observed at taps Nos. 15, 17 and 18 are not characteristic of chlorine but are due to some other substance in the water either factory wastes or organic matter, due undoubtedly to pollution which is unaffected by chlorine." As pointed out above, however, this is not always true, as in several instances very offensive tastes and odors have been caused by the presence of coal tar wastes containing phenol in the chlorinated water even when very greatly diluted.

In a report on the supply dated December 9, 1921, it was recommended:

1. That the water company carry out the previous recommendations of this Department regarding the continuous and careful operation of the purification plant with special reference to the application of a sufficient

RESULTS OF WATER ANALYSIS

Abbreviations used to describe odors of water: 0, none; 1, very faint; 2, faint; 3, distinct; 4, decided; 5, strong; 6, very strong; a, aromatic; d, disagreeable; e, earthy; f, fishy; g, grassy; m, musty; v, vegetable

Municipality	County	Source of sample	Date of collection	PHYSICAL				CHEMICAL (PARTS PER MILLION)								BACTERIOLOGICAL			
						ODOR		NITROGEN AS —						HARDNESS		Bacteria per c. c. gelatin 20° 48 hours	B. COLI TYPE + = PRESENT — = ABSENT		
				Color	Turbidity	Cold	Hot	Free ammonia	Albuminoid ammonia	Nitrites	Nitrates	Oxygen consumed	Chlorine	Total	Alkalinity		10 c.c.	1 c.c.	1-10 c.c.
Waterloo......	Seneca....	Final effluent, Empire Gas and Coke Co., outlet No. 1, old canal..............	10/25/21	....	....	....	....	......	......	....	....	....	....	......	.....	20,000 4,800	3+0—	3+0—	3+0—
Waterloo......	Seneca....	Waste at outlet No. 2 into old canal....	10/25/21	....	....	....	....	......	......	....	....	....	....	......	.....	30,000 3,900	3+0—	2+1—	0+3—
Waterloo......	Seneca....	Effluent from vitrified sewer 75 feet west of No. 1 outlet....................	10/25/21	....	....	....	....	......	......	....	....	....	....	......	.....	10 4	0+3—	0+3—	0+3—
Waterloo......	Seneca....	Castle creek in Geneva, 200 feet north of outlet into old canal...............	10/25/21	....	....	....	....	......	......	....	....	....	....	......	.....	*1,000,000 78,000	3+0—	3+0—	3+0—
Waterloo......	Seneca....	North Creek at Geneva at outlet to old canal..........................	10/25/21	....	....	....	....	......	......	....	....	....	....	......	.....	24,000 425	3+0—	3+0—	3+0—
Waterloo......	Seneca....	Old canal, 700 feet west of outlet.......	10/25/21	....	....	....	....	......	......	....	....	....	....	......	.....	210,000 28,500	3+0—	3+0—	0+3—
Waterloo......	Seneca....	Barge canal at lake entrance northeast of highway bridge.................	10/25/21	...	2	2 a	2 a	.020	.404	.003	.200	3.8	75.0	108.6	104	4,800 36	3+0—	3+0—	2+1—
Waterloo......	Seneca....	Old canal at entrance to Barge canal...	10/25/21	50	15	3 a	3 a	3.440	1.090	.060	.100	24.4	95.0	214.5	118	850,000 8,500	3+0—	3+0—	2+1—
Waterloo......	Seneca....	Kendig creek at State highway.........	10/25/21	20	40	1 a	1 a	.006	.334	005	.120	17.6	55.0	157.2	144	1,000 200	1+2—	2+1—	0+3—
Waterloo......	Seneca....	Raw water, Barge canal intake.........	10/25/21	Tr.	3	2 a	2 a	.108	.042	.008	.800	3.9	75.0	120.0	102	8,200 3,900	3+0—	3+0—	3+0—
Waterloo......	Seneca...	Filtered water.................	10/25/21	....	...	2 a	2 a	.072	.128	040	.400	2.7	75.0	100 0	82	29,000 1,900	3+0—	3+0—	3+0—

Waterloo	Seneca	Canal at intake, raw	11/ /21	....	Tr.	1 e	1 e	.070	.122	.002	.500	3.0	69.0	117.2	101	13,000 1,600	3+0—	3+0—	0+3—
Waterloo	Seneca	Coagulated water	11/ /21	....	....	....	....	....	....	....	....	....	....	....	....	9,600 1,100	3+0—	3+0—	2+1—
Waterloo	Seneca	Chlorinated water at pump discharge	11/ /21	....	....	....	....	....	....	....	....	....	....	....	....	9,200 230	3+0—	0+3—	0+3—
Waterloo	Seneca	Filter effluent	11/ /21	....	....	1 e	1 e	.120	.118	.002	.500	3.0	69.5	117.2	97	1,100 130	3+0—	0+3—	0+3—
Waterloo	Seneca	Tap in hospital	11/ 21	....	....	....	....	....	....	....	....	....	....	....	....	7,800 180	3+0—	3+0—	0+3—

* Liquefied.

amount of alum and chlorine to insure that a water of safe and satisfactory sanitary quality will at all times be delivered to the consumers in the village.

2. That in this respect the water company maintain at all times sufficient supply of both alum and chlorine in order that there may be no interruption of the application of alum and chlorine as was experienced at the time of the recent inspection.

3. That this Department make further observations and studies in order to determine the cause for the objectionable tastes and odors that occur at intermittent periods.

4. That both the water company and the village officials cooperate in making daily observations and records of the wind and weather conditions, together with records of the nature of the tastes and odors observed and the velocity and direction of the wind when such tastes and odors occur in their public water supply in order that this information may be of assistance to the Department in determining the cause or source of the objectionable tastes and odors.

5. That the water company should make daily starch iodide tests for the presence of excess chlorine in their public water supply in accordance with the directions attached to this report, in order that a sufficient amount of chlorine may be applied at all times to insure the effective sterilization of the supply.

6. That the water company make frequent chemical and bacteriological analyses of the supply, in order to determine the proper amount of both alum and chlorine to be applied to obtain a water that shall be both of a safe and satisfactory sanitary quality and of a good physical quality.

WATERTOWN

A reinspection of the public water supply of the city of Watertown, Jefferson county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on April 13, 1921. Previous inspections of the supply were made by this Division in 1909, 1914 and 1918, the reports on which are published in the 30th, 36th and 39th Annual Reports of the Department respectively.

Watertown has a present population of about 30,000, practically all of whom are served by the public water supply. The waterworks are owned and operated by the municipality under the control of the department of water, light and power, of which Mr. J. W. Ackerman is superintendent. The water supply is derived from the Black river, about 2 miles east of the city, and is subjected to aeration, coagulation and filtration through gravity rapid sand filters and chlorination before being pumped directly into the mains.

Black river above the intake has a watershed area of 975 square miles, on which there is a population of about 30,000, about 20 per cent of whom discharge untreated sewage into the river. The river also receives considerable pollution from wastes of pulp mills along the stream.

Since the last inspection in 1918 a number of changes in the equipment and operation of the filtration plant have been made. Additional filtration units have been installed to care for the increased consumption, although by the policy of metering the consumption has already been considerably reduced. The river channel is now permanently used as a coagulating basin, except at times of high water. Liquid chlorination apparatus, installed in duplicate, has replaced the hypochlorite method of sterilization. Changes have also been made in the pumping equipment. No action has been taken by the city in regard to the question of a revision of the rules and regulations for the protection of the supply. The city authorities are contemplating the enactment of an ordinance in regard to the maintenance of cross connections of auxiliary supplies with the public water supply.

In a report dated April 28, 1921, on an inspection of the supply, the following recommendations were made:

1. That consideration be given to the revision of the rules and regulations.
2. That all cross connections with private supplies be provided with double check valves, properly installed and accessibly located.
3. That scales be provided under the cylinders for weighing the chlorine.
4. That the present careful oversight of the operation of the purification plants be maintained.

WATERVLIET

An investigation of the public water supply of the city of Watervliet was made by Mr. Earl Devendorf, assistant engineer in this Department, on May 6, 1921. Previous investigations of this supply were made in 1918 and 1919 and reports thereon published in the Annual Reports of the State Department of Health for those years.

Watervliet is a city of some 17,000 inhabitants, located in the northern part of Albany county. The city is served with a public sewer system, the sewage from which is discharged, without treatment, into the Hudson river. The water supply is obtained from an impounding reservoir constructed on the Normanskill creek some 14 miles west of the city. The water is pumped to a raw water reservoir about ½ mile west of the city and from the reservoir flows by gravity through a gravity mechanical filter plant to the distributing system in the city. The water supply is owned by the city and is operated along with the other city departments under Mr. H. E. Gabriels, general manager, and Mr. N. J. Normile, chemist in charge of the filter plant. The average daily consumption for 1920 was 3,200,000 gallons per day, of which 561,300 gallons per day were used for industrial purposes.

In the 1918 report it was recommended that the city authorities curtail the water consumption by the installation of meters, operate the reservoir and pumping station at French Mills so as to preclude any serious depletion of the supply and operate the purification plant with the greatest care and efficiency, employing a resident chemist. It was further recommended that a second pipe line be installed from the filter plant to the general distribution system and that the Arsenal authorities separate their water supply systems at the earliest possible date.

At the time of the recent inspection it was learned that the city authorities have installed additional meters and are contemplating the installation of as many more meters as the finances of the water department will permit. The city authorities have installed an additional electrically operated pump at the pumping station at French Mills to be used for pumping water to the raw water storage reservoir. This unit is of such a capacity that when operated with one of the hydraulically operated pumps it will supply sufficient amount of water for the city's needs. The authorities at the Arsenal have separated their two systems of water. To date the city has not installed a second pipe line leading from the filter plant to the general distribution system.

On May 19, 1920, a serious break occurred in the wood stave pipe leading from French's Hollow to the raw water storage reservoir. The work of repair on this pipe line was not completed until June 15, 1920, when the filter plant was again operated. During this interval water was supplied to the city by pumping from the Hudson river through the pumping station located at the Arsenal. Again on June 18, 1920, a small break in the pipe line occurred. Pumping was started again on June 24 to fill the storage reservoir and the filter plant again started on August 1st. During this period also water was furnished to the city by pumping from the Hudson river through the Arsenal pumping station. The Hudson river water was chlorinated, using approximately 2 parts per million before being delivered to the distribution system for consumption.

At the filter plant 7 of the 10 filter units were in operation at the time of the inspection. Alum was being applied to the raw water approximately at the rate of 1¼ grains per gallon. The aerators at the filter plant were in operation, having been started about April 1st. From an examination of the Venturi meter charts the quantity of water filtered varies from a maximum of 4½ million gallons per day to a minimum of 2 million gallons, corresponding to rates of 116,000,000 to 52,000,000 gallons per acre per day.

Chlorine is applied through a Wallace & Tiernan dry feed apparatus and was being operated under manual control. An automatic control was installed at the time the plant was constructed but some trouble had been experienced in the operation of the manual control apparatus, due to the liquid in the manometer being thrown out when the flow of water from the filter plant was changed by the opening or closing of a valve on one of the filter units. It would appear desirable to have a representative of the Builders Iron Foundry examine the installation in order to determine the cause and overcome the trouble, so that the amount of chlorine applied to the water may be regulated in proportion to the amount of water being filtered as provided for by the original design and installation. Scales are provided for weighing the cylinder and checking the operation of the chlorine apparatus. Chlorine is being applied at the average rate of approximately .36 parts per million.

The authorities in charge of the public water supply, since the time of the break in the main trunk line leading to the raw water storage reservoir from French Mills pumping station, have employed a patrolman who daily inspects this line. By this means any small leaks which may occur are discovered and repaired immediately. In the spring of 1919 the city authorities engaged the Pitometer Company to make a survey of the water distribution system in order to discover and eliminate any leaks. This survey indicated that the greatest water waste was in the house services and in the under registering of the industrial meters.

In a report upon the supply dated May 20, 1921, it was recommended:

1. That the city authorities continue their careful operation of the filter plant and the pumping station at French Mills in order that a continuous supply of water of good sanitary quality may be furnished at all times.
2. That the city authorities continue to curtail as much as possible the waste of water by discovering and eliminating leaks and by installing meters.
3. That the city authorities install, as previously recommended, a second pipe line from the filter plant to the city distribution system or install a by-pass line at the railroad crossing, provided with valves.

WATKINS

A reinspection of the public water supply of the village of Watkins was made by Mr. W. J. Erickson, sanitary inspector, on April 12, 1921. Previous inspections of this supply were made in 1913, 1915 and 1917, the reports upon which are published in the Annual Reports of this Department for the respective years.

Watkins, which is a village of about 2,800, is located in Schuyler county at the southern end of Seneca lake, 22 miles north of Elmira. The Watkins Glen station on the Pennsylvania division of the New York Central is about 2 miles from the village which may be reached by a bus line. Practically the entire population is served by the public water supply which is owned by the village and operated under the direction of the board of water commissioners of which Mr. C. M. Cole is president and Mr. Charles E. Dennis is superintendent. The supply is derived from Seneca lake. After sterilization with liquid chlorine it is pumped to 2 storage reservoirs serving the high and low levels of the village. From these reservoirs the water flows by gravity through the distribution system. The chlorination plant is located in a small brick room adjacent to the power plant. The apparatus which is of the solution feed type is in duplicate so that should one be out of order it would not be necessary to stop chlorinating while it is being repaired. One of the apparatus had been shipped to the manufacturers for repairs at the time of the inspection. The chlorine is applied to the suction line of the pumps. At the time of the inspection the chlorine was applied at such a rate as to require 18 seconds for each pulsation or approximately 1.2 pounds per day. As one pump only was in operation at that time this corresponds to about 0.29 parts per million of chlorine. When two pumps are in operation the rate of application is regulated so as to apply the chlorine at about the same rate. At times of heavy rains and when the condition of the lake currents warrant it, the rate of application of chlorine is increased so as to yield a safe water at all times. Scales are provided for checking the weight of the chlorine used. At times of heavy runoff the lake, especially near the eastern shore becomes very turbid. This turbidity is carried by eddy currents back along the west shore and past the intake. It would seem advisable in order to remove this turbiditty that the supply be subjected to some modern method of filtration.

Watkins Salt company plant has a cross connection between their sprinkler system and the village system. It is said that the village supply is protected by two check valves. Whether these are single or double check valves, could not be ascertained as they are covered and the exact location not definitely known although it was said that they were located between the main and the first hydrant on the company line. The Salt company obtains their supply by pumping from the lake. It was stated that during the summer months the village water is used in the sprinkler system. In case of fire and during the winter, however, the brine water is pumped into the system. It was said that only brine is ever pumped into the system. No other cross connection exists between the village mains and the company supply.

At the time of the 1917 inspection it was pointed out that the rate of applying the chlorine was not varied with the rate of pumping, that inadequate records were kept regarding the operation of the plant and that the results of analyses show inefficient sterilization. It was accordingly recommended that plans for the treatment of sewage of the village of Watkins be submitted to the Department for approval, that consideration be given to installing a filtration plant, that the rate of applying the chlorine be regulated so as to apply not less than .25 parts per million at all times, that the operation of the plant be checked by the weighing scales and that complete records of the operation of the plant be kept.

From the recent inspection it appears that the sterilization plant is better regulated and that our recommendations in this respect have been acted upon. However, no action has been taken by the village toward the installation of a filtration plant nor have plans for sewage disposal been submitted.

In a report upon the supply dated April 22, 1921, it was recommended:

1. That the village continue to operate the chlorine plant efficiently at all times, keeping records showing the amount of chlorine applied as indicated by the chlorine meter and also by the scales, the time the new cylinders are connected, the amount of water pumped and any troubles or difficulties in connection with the operation of the plant.
2. That plans for the treatment of the sewage of the village be submitted to this Department for approval.
3. That consideration be given to the installation of a modern filtration plant.

WAYLAND

A reinspection of the public water supply of the village of Wayland was made by Mr. W. J. Erickson, sanitary inspector, on April 13, 1921.

Previous inspections of this supply were made in 1909 and 1917, the reports upon which are published in the annual reports of this Department for the respective years.

Wayland, which is a village with a population of about 1,700, is located in the northwestern part of Steuben county about 40 miles south of Rochester. There is no sewer system in the village. The water supply is owned by the village and operated under the direction of the board of trustees. It is derived from a well located in the northwestern part of the village from which the water is pumped through the distribution system into a storage reservoir located on a hill just northeast of the village. The consumption averages about 100,000 gallons per day.

The well from which the supply is obtained is located in the northwestern corner of the village near the Erie railroad tracks. It is 25 feet deep and 10 feet in diameter, It is curbed with fire brick laid in cement mortar and covered. In the bottom of this well 5 pipes are driven to depths of from 8 to 15 feet. The water rises to within 15 feet of the ground surface. The well and driven pipes extend through 10 feet of gravel, 5 feet of clay, into water bearing gravel. The sanitary conditions surrounding the well are the same as described in the previous report. A cesspool is located about 95 feet southwest of the well and two privies about 200 feet in the same direction. The electric light plant is about 20 feet and a feed mill about 50 feet distant. Across the tracks to the northeast is a silk mill which employs, under ordinary conditions, about 150, although fewer are being employed at present. The sewage from the mill is discharged into 3 settling tanks located about 250, 300 and 400 feet from the well. Although the well is protected from surface wash by an embankment around the curb which diverts it, the disposal of sewage from a comparatively densely populated area, in cesspools and privies undoubtedly contaminates the ground water in the vicinity, and this contamination may under certain hydrostatic conditions find its way into the supply, either by passing through the wall of the well or through openings in the clay strata into the ground waters tributary to the well. As a method of protecting the supply from contamination and improving conditions in general a comprehensive sewer system to care for the house wastes might be constructed. The sections of the system within 100 feet of the well should be laid with cast-iron pipes with leaded joints. The development of a new supply from a source remote from the built-up section of the village where the village authorities might control a considerable area in the vicinity and effectively protect the water would, of course, be more desirable.

At the time of the previous inspection it was pointed out that although past analyses failed to indicate any active contamination, the water supply is derived from a well which is unsatisfactorily located. It was accordingly recommended that the insanitary conditions be improved by constructing a sanitary sewer system, that pending the completion of the sewer system all privies and cesspools within 500 feet be provided with tight removable containers, the contents of which are to be disposed of at regular intervals, that should any active contamination be found steps be taken to remove the same, or should this prove impracticable to sterilize the supply; or if these methods should fail, a new supply, free from all sources of pollution be developed. From the recent inspection it appears that none of these recommendations have been carried out.

In a report upon the supply dated April 30, 1921, it was recommended:

1. That the village authorities consider the development of a new water supply derived from a source so located and protected as to be free from all possibility of contamination.

2. That pending the development of such a supply the present well be protected as far as possible from contamination by making all the cesspools in the vicinity watertight, providing all the privies with removable, watertight containers and maintaining the cesspools and privies in satisfactory sanitary condition, or constructing a comprehensive sewer system and abandoning all the privies and cesspools in the vicinity.

WAYLAND (Delaware, Lackawanna and Western Railroad)

An inspection of the water supply furnished to the Delaware, Lackawanna and Western railroad by the Gunlack Chair company was made by Mr. W. J. Erickson, sanitary inspector, on April 13, 1921.

The water supply is owned and controlled by the Gunlack Chair Company, for which Mr. W. H. Gunlack is manager. The water supply is derived from a well located on property adjacent to the chair works about a mile south of the village and adjacent to the Delaware, Lackawanna and Western railroad tracks. Besides supplying the railroad with water at the station it also supplies drinking water and water for the sprinkling system in the mill. The well is drilled, 8 inches in diameter and 70 feet deep, extending through about 45 feet of gravel and 25 feet of rock. The well is adequately protected from surface wash. A sewer passes within about 75 feet of the well and empties its contents into a cesspool about 200 feet from the well. There appeared to be little opportunity for contamination from the cesspool, although the possibility of leakage from the sewer seems a potential source of pollution.

In a report dated May 2, 1921, on an inspection of the supply, the following recommendations were made:

1. That the premises be kept in a neat and sanitary condition at all times and that all possible precautions be taken to prevent pollution of the soil in the vicinity.
2. That the owners of the supply consider the development of a new supply of unquestionable purity and from a source more satisfactorily located.

WELLS BRIDGE

A reinspection of the public water supply of the village of Wells Bridge, Otsego county, N. Y., was made by Mr. N. H. Baier, sanitary inspector in this Department, on March 2, 1921.

A previous inspection of the supply was made by this Division in the year 1917, the report upon which is published on page 569 of the Annual Report of this Department for that year.

Wells Bridge is located on the Susquehanna river in the southeastern corner of the town of Unadilla, 13 miles southwest of the city of Oneonta. The present population is 125, of whom 95 per cent are served by the public supply. The waterworks, called the Wells Bridge Waterworks Company, are owned and operated by Mr. Seymour L. Root. The water is derived from a spring, located on a hillside a mile northeast of the village, from which it flows by gravity through a 1-inch lead pipe to a distributing reservoir situated on a knoll some 600 feet north of the village. There was no method of estimating the amount of water consumed in the village. The village has no sewerage system, about three-fourths of the population sewering directly into the Susquehanna river while the remainder have cesspools.

The spring is developed by a basin of masonry construction 4 feet in diameter by 2 feet deep covered with loose boards. The apparent watershed, which is remote from any habitation, is about 0.15 of a square mile of forested land having a hard pan subsoil. The construction of the basin is such that both surface wash and chance or wilful contamination may reach the supply. To eliminate such possibility the wall of the basin should be extended about a foot above the surrounding ground surface and a more substantial covering provided. Inspections of the watershed are made a few times each year.

The reservoir is of concrete, circular in form and covered with a conical wooden roof.

The sidewalls extends about a foot above the surface of the surrounding ground. The reservoir is cleaned once a year and the mains are flushed a few times yearly. The land around the reservoir is enclosed by a fence.

In our previous report it was recommended that steps should be taken to more satisfactorily develop the spring supply by constructing a masonry or concrete curb around the spring, which would extend at least 1 foot above the surface of the ground and provide the basin thus formed with a tight cover and that in order to avoid the necessity for the use of the auxiliary well an additional spring, satisfactorily located and free from possibilities from contamination, should be developed and connected with the present reservoir.

From our recent investigation it appears that conditions remain practically the same as at the time of our previous inspection. The auxiliary well, the use of which has been resorted to on two occasions, has not been in use for some years, since the present supply has proven adequate to supply the needs of the village.

In a report upon the supply dated March 22, 1921, it was recommended:

1. That the spring basin be adequately protected from surface wash by extending the walls of the basin about a foot above the surface of the ground.
2. That a more substantial cover be provided for the basin to avoid chance or wilful contamination.

WESTERN NEW YORK WATER CO.

A reinspection of the public water supply furnished by the Western New York Water company to the city of Lackawanna and a number of villages, and towns in Erie county was made on December 9 and 10, 1920, by Mr. Albert I. Howd, assistant engineer in this Department, accompanied by Mr. H. F. Huy, General Manager of the Western New York Water Company. Previous investigations of this supply have been made by the Department in 1912 and 1915.

The water supply of the Western New York Water company is obtained from Lake Erie, the intake being located 6,000 feet off shore at Woodlawn beach, which is about 2½ miles south of the southern boundary of the city of Buffalo. The water flows by gravity through the intake pipes to the suction well of the pumping station at Woodlawn, where it is chlorinated and pumped into the distribution system, the surplus over consumption flowing into an open reservoir in the town of East Hamburg. A second pumping station and reservoir are located at Depew. The water is pumped from the Depew reservoir into a high service system. Depew and Lancaster and all mains north of the New York Central railroad tracks are on the high service system.

The Western New York Water company sells water wholesale to a number of villages which own and maintain their own distribution systems. The villages so supplied are Blasdell, Lancaster and Kenmore and about 50 per cent of the town of Tonawanda. The company owns the distribution system and furnishes water to the following places: The city of Lackawanna, villages of Depew and Sloan, and the whole or portions of the towns of Alden, Amherst, Cheektowaga, East Hamburg, Hamburg, Lancaster, West Seneca and Tonawanda. The total population served with water by the Western New York Water Company is about 50,000. The water consumption is about 30 gallons per capita. In addition to the water furnished for domestic consumption water is supplied to a number of railroads and some 60 manufacturing plants in the several villages and towns mentioned above. The average total daily water consumption is about 9,000,000 gallons. At the time of the inspection the Venturi meters at the Woodlawn pumping station indicated 9,960,000 gallons as the daily rate of pumpage. The records at the pumping station showed that for the period between November 19 and December 8, 1920, the average amount of water pumped daily was 9,623,000 gallons. The minimum amount of water pumped on any day during this period was 8,380,000 gallons on November 25, and the maximum amount was 10,813,000 gallons on November 27.

The intake of the water supply consists of two concrete cribs located in Lake Erie about 6,000 feet off shore and at a depth of approximately 24 feet below the water surface. The cribs are 8 feet square and the tops of them are covered with bar screens having 1 inch openings. The water collected by these cribs flows into two cast-iron pipe lines, 20 inches and 30 inches in diameter, which unite some distance off shore. From this point a 30-inch pipe is laid to the suction well in the pumping station. The suction well is 10 feet wide, 40 feet long, and 26 feet deep. One-quarter-inch mesh screens are provided in the well to further protect the pumps.

The water is treated with liquid chlorine in the suction well at the pumping station. The report on the investigation made by this Department in 1912 pointed out that the water supply was somewhat polluted at more or less infrequent intervals by the sewage which is discharged into the lake from nearby thickly populated sections and recommended that a sterilization plant be maintained at the pumping station for the treatment of the whole supply. The Western New York Water Company accordingly installed an apparatus manufactured by the Electro-Bleaching Gas Company for the sterilization of the supply with liquid chlorine in December, 1913. This apparatus was replaced in April, 1920, by a manual control, solution feed type of chlorinator manufactured by Wallace & Tiernan. Chlorine is generally applied at the uniform rate of 2 pounds per million gallons. If the turbidity of the water reaches over 100 parts per million. it was stated that the amount of chlorine is increased to 2½ pounds per million gallons. At the time of the inspection chlorine was being applied to the water at the rate of about 19 pounds per 24 hours. Since the rate of pumpage was 9,960,000 gallons per 24 hours, the amount of chlorine being applied was equivalent to 0.23 parts per million. For the 20 days previous to the date of the inspection the average amount of liquid chlorine applied to the water was 0.20 parts per million. On 8 of the 20 days the amount of chlorine applied dropped below 0.20 parts per million, the minimum amount being 0.14 parts per million on December 5 and the maximum amount 0.25 p. p. m. on December 2.

The chlorine is applied in the corner of the suction well to one side of the entrance of the intake pipe. It seems possible that under certain conditions the chlorine might not be uniformly applied to the water. For instance having in operation the first pump, the suction of which is near the point of application of the chlorine, and the third pump, the suction of which is at the other end of the suction well, it seems possible that the larger part of the chlorine solution might go to one pump. If both pumps discharge into the same main the chlorine might become more uniformly mixed with the water, but if the pumps discharge into the two separate mains from the pumping station, it seems possible that some consumers might receive insufficiently chlorinated water. It would seem, therefore, that the chlorine might better be applied directly into the intake pipe in the suction well, or at some other point more satisfactory than the present one. Duplicate parts of the chlorination apparatus are kept on hand and the old Electro-Bleaching Gas Company's apparatus is available for use if necessary. Scales are provided under the chlorine cylinders for checking up the amount of chlorine used and the tolidin test is made daily for excess chlorine. A visit at the pumping station by an engineer of the Department on January 8, 1921, showed that the tolidin standards, which are kept in 100 cc. Nessler tubes, had evaporated to about one-half their original volume and hence were in an unsatisfactory condition. They should, therefore, be renewed. There were 700 to 800 pounds of liquid chlorine or about 40 days' supply on hand at the time of the inspection.

The water is pumped from the building through a 16-inch and a 24-inch pipe line directly into the mains, the surplus flowing through a 24-inch pipe to the Windom reservoir in the town of East Hamburg, about 4½ miles directly east of the Woodlawn pumping station. This reservoir is of earth embankment construction and is concrete lined. It is 500 feet in diameter, 13 feet deep, and has a capacity of 10 million gallons or about 1 day's supply. There is one inlet and outlet pipe which enters the bottom of the reservoir.

The reservoir is constructed above the surrounding ground and is, therefore, not subject to surface wash. The reservoir is surrounded by an iron fence.

The Depew reservoir is constructed of concrete with an earth embankment. The reservoir is 200 feet square and 13 feet deep, and has a capacity of 3½ million gallons. The reservoir has a 16-inch inlet pipe at bottom of reservoir and four 16-inch screened outlet pipes. The reservoir is constructed above the surface of the surrounding ground and is surrounded by a fence.

The waters along the southern and eastern shore of Lake Erie are subject to considerable pollution from sewage from a number of cities and villages. Some of the more important of these places in New York State include Westfield (3,500), the sewage from which is discharged through Chautauqua creek into Lake Erie; the sewage from Fredonia (5,500) is discharged into Canadaway creek before it enters the lake; the city of Dunkirk (18,000), empties its sewage through numerous outlets into Lake Erie; the sewage from Silver Creek (3,200) and Hamburg (3,000) is also discharged into creeks tributary to Lake Erie. The waters in the vicinity of the intake of the Western New York Water Company are subject to direct or indirect pollution from Athol Springs, Bay View, Woodlawn Beach, Blasdell and Lackawanna. Smoke creek, considerably polluted by the sewage from the city of Lackawanna which has a population of about 16,000 and by industrial wastes from manufacturing plants, empties into Lake Erie about 1 mile below Woodlawn Beach. Buffalo creek, heavily polluted by sewage from the city of Buffalo discharges into Buffalo harbor several miles below Woodlawn beach. The last two cases mentioned are probably the most important, since they discharge enormous quantities of polluting matter into Lake Erie within a relatively short distance from the intake of the Western New York Water Company's water supply.

It was learned at the time of the inspection that the Western New York Water Company has considered filtration of this water supply. The space in the pumping station now occupied by the emergency steam pumping equipment has been considered suitable for the location of rapid sand filters. Although no definite plans have been made, according to the statements of the water company, any changes or improvements made at the pumping station are made so that they would not interfere with and might be incorporated in a filtration plant.

In a report upon the supply dated January 28, 1921, it was recommended:

1. That the Western New York Water Company continue their careful supervision of the water supply furnished to the city of Lackawanna and other villages.
2. That the tolidin standards be renewed or the starch iodide test substituted for the tolidin test and that frequent tests be made to determine the excess of chlorine in the treated water.
3. That the chlorination apparatus be carefully operated and controlled and sufficient chlorine applied in a proper manner and at all times to show a slight excess in the treated water by the tolidin or starch iodide test and properly sterilize the water.
4. That the Western New York Water Company consider the immediate installation and operation of a modern filtration plant for the treatment of their water supply derived from Lake Erie, so that a water of satisfactory sanitary quality may be furnished to the consumers at all times.

WHITEHALL

An inspection of the Whitehall public water supply was made by Mr. Earl Devendorf on June 3, 1921.

Whitehall is located in Washington county, 78 miles north of Albany. The population is 4,700, all of which is served with the public water supply. The waterworks are in charge of a board of water commissioners of which Mr. James Sullivan is president, Mr. E. H. Syring, superintendent, and Mr. M. G. Therrien, engineer. The source of supply is the Mettawee river, and the con-

ı amounts to approximately 1,100,000 gallons per day and is delivered
ping directly into the village main. An auxiliary upland supply is
e and is used at times when the Mettawee river is very turbid.
ply is delivered by gravity from reservoirs to the village distribution
Storage is provided by an earth embankment reservoir having
0 gallons capacity. The Mettawee river supply is sterilized by means
chlorine before being pumped into the village distribution system.

s found upon inspection that the conditions surrounding the supply
ctically the same as described in the report of July 26, 1918. With
e to the application of chlorine examination of the village records
that chlorine was being applied at an average rate of approximately
s per million.

pland supply is used without treatment but the watershed is
and uninhabited and not subject to any permanent sources of
n, although it is subject to accidental, incidental and wilful pollution
nters or visitors thereto.

hlorine content is also somewhat high indicating the presence of
n of human or animal origin. The results of the bacteriological
tion of the chlorinated water with the chlorination apparatus operat-
he rate of 13 pulses per minute, at which time, when a very faint
s obtained, showed a somewhat high total count with the absence
isms of the B. Coli type in all of the inoculations examined. With
aratus operating at 20 pulses per minute the count is low and the
ns of the B. Coli type were absent in all inoculations. The results
acteriological examination of the sample collected from a tap in the
show low total counts with the absence of organisms of the B. Coli
all of the inoculations examined, indicating that the supply was free
ive contamination and that the chlorination plant was being operated
fective manner at the time of the inspection.

memorandum upon the supply dated December 31, 1921, it was con-

. That as yet the village has not taken any definite steps for acquiring
ew supply or providing further treatment for the present supply.

. That the chlorination apparatus was being operated in an effective
nner and the supply appeared to be in a fairly satisfactory sanitary
dition at the time of the inspection.

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dition to the above, inspections were made and detailed reports
in cases of water supply at the following places:

le Chasm, Bainbridge, Batavia (State School for the Blind), Bergen,
Falls, Brocton, Candor, Castorland, Cold Spring, Corning, Delancey,
shkill (school), Fishkill (brick yards), Gilbertsville, Groton, Hobart,
Huntington, Lawson Lake (camps), Locke, Mamakating, Milford,
n, Morris, Mt. Upton, Norfolk, Nunda, Oyster Bay (Farmade Farms),
ensselaer, Walton, Warrick (N. Y. Telephone Co. Home), and West
(camp).

TRANSMITTAL OF REPORT UPON ANALYSES OF PUBLIC WATER SUPPLIES

During 1921 some 200 letters were written to water companies and local authorities in charge of the public water supplies in which the results of the water analyses made by the Division of Laboratories and Research were transmitted. In each case the results of the analyses were carefully studied and interpreted and recommendations were made for improvements in the supplies when the analyses indicated that the supplies were not of satisfactory sanitary quality.

INVESTIGATIONS OF COMPLAINTS RELATING TO STREAM POLLUTION

INVESTIGATIONS OF COMPLAINTS RELATING TO STREAM POLLUTION

The discharge into the watercourses of this State of sewage, wastes from creameries, industrial wastes, garbage, and other refuse is the source of many complaints made each year to the Department. The substance of the complaints usually is that the stream is so polluted that very objectionable odors are created, or that cattle cannot drink the waters of the stream, or that the waters are used for bathing in the summer and ice harvesting in the winter, the pollution of which constitutes a menace to health. The complaints generally come from people directly affected by the nuisances but very often requests for assistance and advice in dealing with cases of stream pollution come from local boards of health or village officials.

In cases where conditions warrant it, a careful investigation is made of the stream and its surroundings and the source and nature of the pollution. A report is prepared describing the conditions found to exist and recommendations are made as to the remedial measures which should be taken. Copies of the report are transmitted to the local board of health, to the sanitary supervisor, to the complainants, and to the parties causing the pollution of the stream.

The reports upon a few of the more important of such cases which came before this Department during 1921 are given below and a list is also appended of all other cases.

NEW ROCHELLE

An investigation of the pollution of the tidal waters of Echo bay and vicinity at New Rochelle was made on November 17, 1920, by Mr. A. I. Howd, assistant engineer in this Department, accompanied by Mr. R. R. Cooper, sanitary inspector for the department of health of New Rochelle, and Mr. A. C. Allen, assistant engineer of the department of public works of New Rochelle.

The investigation was made as a result of complaints received at this Department. In October, 1920, a complaint was made regarding the presence of sewage during the summer in the waters near Stonebergs and the stone pier. In the spring of the same year a complaint was received in reference to objectionable conditions created in the inner arm of Echo bay by the discharge of raw sewage and garbage from house boats. The allegations of the complainants may for convenience be generally stated as follows:

1. That house boats, launches and other crafts are moored during the summer season in Echo bay near Hudson park where public bathing beaches are maintained and that the discharge of raw sewage and garbage from these boats is injurious to the health of bathers and creates conditions of nuisance.
2. That in the winter season these house boats are anchored in coves near the shore, the boats being generally aground at low tide at which time a nuisance is created from the discharge of raw sewage and garbage.

Since the present investigation was made in November it was impossible to verify the conditions complained of during the summer season. It was learned, however, that during the summer some 25 house boats and some 150 yachts and launches are moored or cruise around in Echo bay opposite Hudson park not far from the bathing beaches; and that the sewage and wastes from these boats are discharged directly into the bay.

It was, however, possible to investigate during the inspection the conditions as they existed at that time. There were found at the time 11 house boats moored in the northerly cove of Echo bay near the Stonebergs, 10 of which were occupied. The boats as a rule are provided with flush closets and sinks, the water for use in these fixtures being pumped from the bay into a tank on top of the boat. At low tide the boats generally rest on the ground and the sewage and wastes from the boats are, therefore, discharged onto the ground. At high tide the boats are floated and the sewage and wastes are, under this condition, discharged into the water. The garbage and other household wastes are thrown overboard. While no conditions of nuisance could be said to exist at the time of the inspection, it is probable that during the summer time the discharge of sewage and wastes from these and other craft would be a menace, if not a nuisance to health and might properly be regulated by the local health regulations. It is possible that the ordinance enacted by the department of health of New Rochelle on February 3, 1916, requiring that "no house boat be allowed to be moored nearer the shore than low water mark between May 1 and September 15," may, if properly enforced, partially remedy the conditions that exist during the summer season but could hardly be expected to wholly remedy these conditions. To effectively remedy these conditions it would seem necessary to further restrict the moorage and anchorage of these boats and to prohibit by proper ordinances the discharge of raw sewage and excreta from water craft generally within certain restricted areas.

A 24-inch outfall sanitary sewer serving a large section of the city of New Rochelle passes through Hudson park and extends for a distance of some 3,000 feet into Long Island sound, where it discharges 20 feet below mean sea level. The pipe line is constructed of cast-iron pipe and as far as is known it does not leak. It is quite possible that some sewage discharged from this and other outfalls is carried to bathing beaches and the waters of Echo bay by the tides and the only satisfactory means of correcting pollution from these sources would be the installation of sewage disposal plants for the treatment of this sewage.

It was pointed out in a report dated January 18, 1921, that the conditions concerning which complaints have been made might be most satisfactorily regulated by the enactment and enforcement of appropriate local ordinances, as pointed out above, supplemented by the construction of sewage disposal plants, and it was recommended that such action be taken by the local authorities. Copies of the report were sent to the local department of health of the city of New Rochelle and to the complainants.

ONEIDA

An investigation of a complaint in regard to the pollution of Oneida creek at Durhamville, Oneida county, by the discharge of sewage from the sewer system of the city of Oneida was made on July 19, 1921, by Mr. Albert I. Howd of this Division as a result of complaints to the local board of health of the town of Verona and at the request of the local health officer.

The city of Oneida is located on a relatively flat area of land in the northeastern part of Madison county. The city has a population of 10.541 according to the census of 1920, an increase of 2,224 or 26.7 per cent since 1910. Oneida creek flows along the eastern edge of the city. Durhamville is an unincorporated village having a population of 730 and is also located on Oneida creek about 1½ miles north of and below the city of Oneida.

The matter of sewerage and sewage disposal for the city of Oneida has been before this Department for some time. Plans for a comprehensive sewer system and for a sewage disposal plant for the then village of Oneida were approved by the State Board of Health on April 6, 1892. The sewer system was constructed during the fall of 1896.

As a result of a complaint an investigation was made on October 9 and 10, 1896, at which time it was found that the contract for the construction of the sewer system was nearing completion and that no provision was being made for disposal works, nor had property been secured on which to build the disposal works. It was pointed out in the report upon the investigation that the character of Oneida creek and the circumstances attending it were such that any further addition of sewage to the present amount discharged into it would be quite certain to constitute a nuisance. In 1897, 1898, 1899 and 1901 plans were approved for changes and additions to the sewer system.

The waters of Oneida creek were very low in 1908, as a result of which very objectionable conditions were created at Durhamville by the discharge of sewage from Oneida into the creek. Revised plans for sewerage were submitted for approval on October 21, 1913; were approved on November 10, 1913, and a permit issued in connection with the approval of the plans allowing the discharge of effluent from the proposed sewage disposal works. The plans provided for sewer extensions, an intercepting sewer and a sewage disposal plant consisting of a pumping station, Imhoff tanks, dosing tanks, sprinkling filters and sludge beds. Application was made to this Department on March 26, 1914, for permission to temporarily omit from construction the sprinkling filters, since the village was financially unable to construct the entire works. After careful consideration this Department gave permission to the village to temporarily defer the construction of the sprinkling filters on condition that they should be constructed and put in operation by November 1, 1915.

The present investigation disclosed the following facts: The city is provided with a system of sewers constructed on the separate plan which serves about 75 per cent or more of the city. One short section of storm water sewers empties into the separate sewers. The sewage from the system is discharged through two outfall sewers into Oneida creek. It was learned that the city has purchased a small area of land, now being used as a refuse dump, and was contemplating buying about 25 acres of land for a site for a sewage disposal plant. No active steps have been taken, however, to provide for the construction of a sewage disposal plant. The storm water sewers generally empty into a canal feeder which runs through the city.

One outfall sewer serves the section of the city north of the New York Central railroad tracks and a small area in the western part of the city south of the New York Central railroad tracks. This sewer is 24 inches in diameter. It receives about ⅜ of the total sewage flow of the city and empties into Oneida creek about 1,000 feet north of the New York Central railroad bridge. The sewer is of tile and terminates in the stream at a point near the shore. A cast-iron pipe apparently was intended to carry the sewage to midstream, but the cast-iron pipe has become upheaved so that the end is out of the water and the tile pipe has become broken near the shore so that the sewage empties through a joint in the tile into the creek. The waters of the creek were very turbid above the outfall sewer. The sewage somewhat discolored the stream. At the bend of the stream below the outlet an accumulation of scum was noticed.

The second outfall sewer is 24 inches in diameter and empties into Oneida creek a few hundred feet above the New York Central railroad bridge. The discharge of the sewer was entirely submerged. The sewage somewhat discolored the waters of the creek.

The latter sewer receives in addition to the sanitary sewage from a large portion of the city, the wastes from the Oneida factory of the New York Canners, Inc., successor to the Burt Olney Canning Company. The wastes including blanching water and wash water from floors and apparatus, are discharged through floor drains into screening manholes. These manholes are a few feet deep and are provided with metal bar screens having ½-inch 1-inch spacings and lying in a horizontal position. The wastes are d charged from the manholes through pipes directly into the city outfall sev which passes through the property of the company. The drainage from ensilage stacks is discharged into cesspools. The solid wastes from plant such as skins and other matter are dumped onto the ground a f hundred feet in the rear of the factory. The domestic sewage from t factory is also discharged into the city sewer system.

The wastes from the gas works of the city are discharged into a dit running along the foot of the New York Central railroad tracks and d charging in Oneida creek. Oily wastes were noticed in this ditch.

The complainants and members of the local board of health of the to of Verona were interviewed and the stream at Durhamville was inspec with them. Portions of the stream and particularly the rocks in the stre were covered with a grayish slime or fungus growth, giving evidence sewage pollution. A black muck about one foot deep existed at differ points on the bank and bed of the creek. Upon stirring up the bed of stream black scum and sludge quantities of oil rose to the surface, giv rise to objectionable conditions. Owing to recent rains, the creek was hig than it had been as a result of which the condition of the stream somewhat improved. It seemed evident however that under certain atm pheric conditions and at times of low water, a serious nuisance would created.

The complainants allege that the odors that arise from the stream dur the summer permeate their houses and are very obnoxious and unhealthf It is further alleged by them that vapors and gases arise from the stre which discolor and destroy paint on their houses.

The matter of providing works to treat the sewage of the city of Onei before its discharge into Oneida creek has been before this Department a the city authorities for a considerable time. The insanitary condition of creek and the necessity of providing works for treatment of the sewage l been brought to the attention of the city authorities on a number of occasi but up to the time of the present inspection no definite action has b taken by them. With a limit of bonded indebtedness of about $550,000 a having at present an indebtedness of only about $300,000, the city shou be in a position to provide sewage disposal works.

It was therefore recommended in a report dated October 14, 1921, th immediate action be taken by the proper authorities of the city of Onei to provide works for the treatment of the entire sanitary sewage of city in accordance with the plans approved by this Department on Novem 19, 1913.

On October 15, 1921, copies of the report were sent to the local boa of health of the city of Oneida and the town of Verona, to the sanita supervisor of the district and to the mayor of the city of Oneida. A co munication was received from the city engineer of Oneida on October 1921, in which it was stated that the city intends to sell bonds and proc with the construction of a disposal plant as soon as preliminary investi tions can be made.

PORT LEYDEN

An investigation of alleged objectionable conditions created by the charge of wastes from the factory of the Borden's Farm Products Compa Inc., at Port Leyden, N. Y., into a small stream tributary to the Black Ri canal was made as a result of a complaint to this Department which sta that whey and other refuse from a cheese factory were being discharged i a basin of the Black River canal; that as a result very objectionable od arose from the canal during the hot weather and that the odors were repulsive, that it was impossible to stay on the lawns or porches, or even the houses at times.

The investigation was made on July 5, 1921, by Mr. A. I. Howd of this Division, accompanied by Dr. F. D. Bigarel, health officer of the village of Port Leyden. The factory of the Borden's Farm Products Company, its operation and the disposal of its wastes were carefully examined, the creek and Black River canal and their surroundings were inspected and the superintendent of the factory, the complainant and people living in the vicinity were interviewed.

Port Leyden is an incorporated village having a population of 706, according to the census of 1920 and is located in the southeastern part of Lewis county. The village has a public water supply derived from two streams a few miles east of the village, but has no sewerage system. Practically all of the houses in the village are supplied with water from the public water supply and about 90 per cent are provided with flush closets. Of the properties provided with flush closets a large number dispose of the sewage by leaching cesspools, a few having settling tanks and small subsurface irrigation systems. The sewage from many properties along the Black River canal is discharged directly into the canal without treatment. The soil in the village is said to be sandy and sandy loam.

It was found from the recent inspection that the Black River canal runs through the center of the village in a northwesterly direction. For its entire length through the village a large number of houses and buildings are situated within a relatively short distance of the canal, the sewage from which is generally discharged directly into the canal without treatment.

The factory of the Borden's Farm Products Company, Inc., is located in the northwestern part of the village a short distance from a small stream. The factory is engaged in the shipping of milk and the manufacture of cheese, employing about 6 men. The maximum amount of milk received at the factory is about 34,000 pounds daily, while at the time of the inspection about 25,000 pounds were being received. About the first of June the manufacture of cheese was discontinued and at the time of the inspection all the milk was being shipped. The factory obtains its water supply from the public supply of the village of Port Leyden. A flush closet is provided for the use of the employees, the sewage from which is discharged with the wastes into the small stream near the factory.

When cheese was being manufactured there were two classes of wastes produced, namely, the whey and the waste water and washings from the floors, cans and apparatus. These wastes were discharged from the factory directly into the stream.

When milk is being shipped the wastes to be disposed of consist principally of the wash water from the floors, cans and apparatus. The wash water is collected by floor drains and discharged through a 3-inch tile pipe into a small stream a few hundred feet west of the factory.

The stream into which the waste water and washings are discharged, has a very small drainage area and a very small flow above the point of discharge of the wastes. The stream apparently rises in the village probably ½ mile west of the factory of the Borden's Farm Products Company. After passing the factory the stream flows in a roundabout course to a point about ½ mile from the factory where it empties into the Black River canal. The Black River canal empties into the Black River a few miles north of Port Leyden. Above the factory of the Borden's Farm Products Company the stream is fairly clear. Below the factory the stream is cloudy and contains a thick foam and scum characteristic of small streams into which wastes from creameries have been discharged. In the immediate vicinity of the stream the usual objectionable odors rising from decomposing milk wastes were noticeable. There was practically no wind at the time of the inspection and the odors which were detected near the stream could not be detected any appreciable distance therefrom.

The Black River canal was not filled with water at the time of the inspection. It was stated by residents living nearby that the canal had been filled this spring but that during the three weeks previous, the water had gradually run out of the canal. There was only a shallow stream of water about 8 or 10 feet wide in the bed of the canal, a large portion of which was covered with a green scum. Matter which appeared to be decomposing wastes was also noticeable. The sewage from a number of houses loc along the canal was being discharged near the top of the bank of the c and running down the side of the canal into the waters thereof. The se from the public school and from a number of residences and buildings in central part of the village is also discharged into the canal. The o of algae, sewage and decomposing milk wastes were detected at diffe points along the canal. It seemed evident that under certain atmosph conditions and a strong wind the objectionable odors rising from the str and the canal might be carried a considerable distance and create ditions of nuisance at times.

The necessity for a sewer system for the village has been pointed ou the local authorities in the past. At the present time the need of suc system is still more evident. The village authorities should therefore, em a competent sanitary engineer to prepare plans for a comprehensive sewe system and a sewage disposal plant for the village, only the more neces portions of which would need to be constructed at the present time. discharge of sewage into the Black River canal from residences, the sc and other buildings in the village should be discontinued.

In view of the above facts the following conclusions were drawn in a re dated August 17, 1921:

1. That the factory of the Borden's Farm Products Company, Inc., discharging sewage and wastes into a small creek and the Black R canal in the village of Port Leyden, creating objectionable condition
2. That the sewage from the public school and from a large numbe private residences and buildings in the village is being dischar through private sewers into the canal creating insanitary conditio

It was accordingly recommended:

1. That the Borden's Farm Products Company provide cesspools the disposal of waste water and washings from their factory at Leyden or that the wastes be disposed of by some other satisfact method.
2. That the sewage from the factory of the Borden's Farm Produ Company be disposed of by separate leaching cesspools or by some ot satisfactory method.
3. That plans for the disposal of sewage and wastes from the fact of the Borden's Farm Products Company be submitted to the St Engineer for approval and that the application for the issuance o permit be made to this Department.
4. That when the cheese is being made at the factory, all the w be taken away for feeding or fertilizing purposes or otherwise sa factorily disposed of.
5. That the village authorities employ a competent sanitary engin to prepare plans for a comprehensive sewerage system for the vill of Port Leyden, which plans should be submitted to the State Engin and Surveyor for approval in accordance with the provisions of chap 510 of the Laws of 1921.
6. That the village authorities make application to this Departm for the discharge of sewage from such a sewerage system.
7. That the local board of health take action in accordance with provisions of the Public Health Law to abate any nuisance created the discharge of untreated sewage wastes into the Black River cana

Copies of this report were sent to the local board of health, to the sanit supervisor of the district, to the village authorities, to the Borden's Fa Products Company, Inc., to the State Engineer and Surveyor and to complainant on August 18, 1921. On August 26, 1921, a communication received from Borden's Farm Products Company in which it was stated t the matter of disposal of wastes in a satisfactory manner would be ta up immediately.

In addition to the foregoing, inspections were made and reports transmitted to the local authorities in cases of stream pollution at the following places:

Adams (town), Adams Center, Butler (town), South Butler, Conewango (town), Conewango Valley, Exeter (town), West Exeter, Gilbertsville, Holland (town), Holland, Johnstown, Orangetown (town), Lederle Antitoxin Laboratories, Pomfret (town), Lilly Dale, Poughkeepsie (town), Vassar College, Red Creek, Savannah, Sennett (town), Throop Station, Sharon Springs, Westmoreland (town), Bartlett Station, and Wolcott.

STIGATIONS NOT ARISING FROM STREAM POLLUTION

INVESTIGATIONS OF PUBLIC NUISANCES NOT ARISING FROM STREAM POLLUTION

This Department receives each year numerous complaints against the existence of conditions of nuisance. The matter of the abatement of nuisances is definitely placed within the jurisdiction of the local board of health both by the Public Health Law and the Sanitary Code. In a great many cases a proper abatement of the nuisance is obtained by referring the matter to the local board of health.

Because of the technical features involved, or when the local board of health is unable to secure a satisfactory abatement of the nuisance, this Department is frequently called upon to assist with advice or by an inspection and report.

Insanitary methods of garbage disposal, emission of smoke and fumes from industrial plants and improper disposal of creamery wastes are among the many forms of nuisance which cause complaints and frequently require investigations. The reports of the investigations made by this Department in a few cases which have come before it during 1921 are given below and a list is appended of all other cases.

MT. VERNON

An investigation of alleged objectionable conditions created by the maintenance of a refuse dump in the city of Mount Vernon was made on June 7, 1921, by Mr. A. I. Howd, assistant engineer in this Department.

Mount Vernon is a city having a population of nearly 43,000 and is located in the extreme southern part of Westchester county adjacent to the New York City line. The main lines of the New York, New Haven and Hartford railroad and the Harlem Division of the New York Central railroad pass through the city. The Bronx river flows in a southerly direction through the western part of the city and the Hutchinson creek (or Eastchester river) forms the eastern boundary line of the city.

The refuse dump of the city of Mount Vernon, concerning which complaint was made, is located in the southeastern part of the city on an area of land near the Hutchinson creek opposite the village of Pelham Manor. The locality is sparsely populated. The nearest house in Mount Vernon is about 350 feet west of the dump and there are relatively few houses within a half mile of it. The nearest house in Pelham Manor is probably one-half mile from the dump.

The following facts were collected at the time of the recent inspection. The contractor for the collection of refuse in the city of Mount Vernon has failed and the collection and disposal of the refuse is being done by the city. The residents of the city are required to separate the garbage, ashes and rubbish, but all are dumped into the same wagon and become mixed at the dump. There are 8 large wagons (holding 4 or 5 yards) and one small wagon used for the collection of refuse in the city. About 25 loads of refuse are collected and dumped daily.

The privilege of reclaiming salable materials from the dump is let to contractors who pay the city a certain amount per month. They level the dump and reclaim rags, bottles, rubber and other salable materials. One of the contractors who was interviewed stated that they are required to cover the dump with earth or ashes when furnished with them by the city.

The site used by the city for the dumping of refuse is located just south of the Mount Vernon sewage disposal plant. At the time of the inspection the dump, which was of an irregular shape, was about 200 feet long and varied in width from 50 to 150 feet. The dump contained large numbers of tin cans, great quantities of papers, and rubbish of all descriptions and piles of garbage. It was learned that the dump had been ignited Saturday, June 4. It was still smoldering at the time of the inspection and dense clouds of smoke were carried a considerable distance by the strong wind that was blowing and odors of burning garbage were distinctly noticeable a few hundred feet from the dump.

Owing to the fire on the above site, it became necessary on Monday, June 6, to dump refuse north of the sewage disposal plant. A relatively large area of land north of the plant had already been filled in by refuse during the past few years. The dump contained very large amounts of papers, piles of garbage and rubbish. The refuse was being leveled as soon as dumped and salable matter was being salvaged. No attempt apparently has been made to cover the dump with ashes or earth for some time since large areas remain exposed. The characteristic objectionable odor of decomposing garbage and of rubbish was noticeable several hundred feet from this dump. When on the dump the odor of fresh garbage could be plainly detected.

It was learned at the time of the inspection that the city authorities are considering the construction of an incineration plant. If the authorities have carefully investigated the various methods of garbage disposal and have found the incineration method most suitable to their case, immediate action should be taken by them to have the plant constructed. If an incineration plant is properly constructed and carefully operated, opportunity for the creation of conditions of nuisance would be reduced to a minimum.

In a report dated June 22, 1921, the following conclusions were drawn:

1. That the city of Mount Vernon maintains a refuse dump in the southeastern part of the city.
2. That apparently no attempt has been made for some time to cover the dump with clean ashes or earth, as a result of which quantities of decomposing and decomposable garbage remain exposed on the dump.
3. That flies may breed on the dump and may constitute a menace to the health of the residents in the section of the city in which the dump is located as well as of the residents of nearby communities.
4. That the dump in its present condition creates conditions of nuisance at times which may be detrimental to the public health.
5. That the city is considering the construction of an incineration plant for the disposal of the garbage.

It was therefore recommended:

1. That immediate action be taken by the city authorities of Mount Vernon to put the dump, located along Hutchinson creek in the southeastern part of the city, in a proper sanitary condition, by covering the entire dump with clean ashes or earth, or by some other satisfactory method.
2. That immediate action be taken by the city authorities to construct the proposed incineration plant, provided it has been determined after careful investigation by the city authorities that incineration is the most feasible method of disposal of garbage for the city.
3. That, pending the construction of the incineration plant, the city collect garbage in wagons or trucks separate from the rubbish and ashes and dump the garbage at the bottom of the dump so that it may be covered immediately with rubbish and finally with clean ashes or earth.

Copies of this report were sent to the local board of health, to the sanitary supervisor, to the commissioner of public works of Mount Vernon and to the complainant on June 23, 1921.

PORT CHESTER

An investigation of the alleged nuisance created by the maintenance of a refuse dump by the village of Port Chester, Westchester county, was made by Mr. C. A. Holmquist on September 15, and 22, 1921, as a result of complaints received by this Department. The inspection was made in company with Mr. C. E. Smith, member of the board of trustees, and Mr. Wilcox, the village attorney, was interviewed.

The village of Port Chester, which has a population of some 17,000 according to the last census, is situated in the western part of Westchester county on Long Island sound and the Byram river, the latter stream forming part of the boundary line between the State of New York and the State of Connecticut. An inspection of the public dump of the village with special reference to the objectionable conditions created by fires on the dump was made by a representative of this Department on December 15. 1920. It was found that although fires had frequently occurred on the dump in the past giving rise to objectionable conditions from smoke and odors steps had been taken by the village authorities to prevent the occurrence of fires on the dump in the future and that the village was planning to install an incinerator for the purpose of destroying its garbage and other refuse. The matter of maintaining the dump in a sanitary condition and preventing the recurrence of fires was taken up by the village authorities at that time and we were assured by them that every effort would be made to maintain the dump in a satisfactory condition.

On August 16. 1921, plans for an incinerator to care for the garbage and rubbish of the village were approved by this Department. At the time of the recent inspection on September 15, it was learned that the village had advertised for bids for the construction of the incinerator but that all bids received were considered too high and had therefore been rejected. It was stated by Mr. Smith, village trustee, that bids for the construction of the incinerator would be advertised and the contract awarded as soon as possible.

It was found from the recent inspection that the entire refuse of the village, including ashes, garbage and rubbish, is collected by a contractor and dumped in the marshy and shallow waters in the village at the head of an arm of Long Island sound on the southerly side of Fox Island road opposite Byram Point, Connecticut. The dump is situated in a fairly sparsely settled section of the village. The municipal sewage disposal plant, consisting of a 2-story settling tank and sludge drying beds, is located about 200 feet north of the dump and the factory of R. R. Mallory & Co., Inc., is situated across the road on the easterly side of the dump. There is also 1 dwelling in Port Chester about 600 feet from the dump but it is not visible from the dump on account of an intervening hill. Between ⅛ and ¼ of a mile from the dump are some 10 residences in Connecticut, situated on the easterly side of the Byram river.

This dump which has been used for the disposal of rubbish by the village for a considerable time covers an area of about 1 acre and the refuse has been deposited on this area from a depth of a few feet to some 15 feet at the outer edge. The old portion of the dump has been covered with sand and gravel and presented a satisfactory appearance and gave rise to no objectionable odors. The outer and newer portion of the dump, however, where the material is being deposited at present, forming a crescent shaped area some 200 feet long and from 2 or 3 feet to some 15 feet wide, had not been covered with soil and the mixture of garbage, ashes and rubbish was exposed to the air at the time of the first inspection. Although a disinfectant was being applied to the wastes in order to prevent the propagation of flies, there were numerous flies on the dump.

A very objectionable odor was given off by the garbage, rubbish and disinfectant from the exposed portions of the dump at the time of the first inspection on September 15, 1921. This odor was very objectionable at a considerable distance from the dump and constituted a public nuisance. Objectionable odors were also given off from a smoldering subsurface fire near one edge of the dump. Attempts made to extinguish this fire had not been entirely successful.

The bottom of the outer portions of the dump is below the high-water mark and there is nothing to prevent some of the garbage and rubbish from being washed away and becoming stranded on the adjacent shores by wind and wave action. A bulkhead should be constructed to confine the refuse and keep it from being washed away.

It was pointed out to the representatives of the village interviewed at the time of the inspection on September 15 that immediate steps should be taken by the village to cover the exposed portions of the dump with soil to a depth of from 6 to 10 inches to prevent the escape of odors. It was also pointed out that the refuse should not be spread over a large area as was the practice at that time but that it should be confined to a small area not more than 10 feet square and that this area should be covered with a thick layer of sand or soil each day so that none of the garbage and rubbish would be exposed to the atmosphere. Any disinfectant that may be applied to the rubbish should be added just before the material is covered with the sand and none of it should be spread over the surface of the ground as the disinfectant used gives off an objectionable and disagreeable odor.

At the time of the second inspection on September 22, 1921, it was found that although the conditions at the dump had been improved somewhat the nuisance had not been abated. The exposed portion of the dump had been covered with a thin layer of sand but the covering was not sufficiently thick to entirely cover the garbage and other wastes or to prevent the escape of objectionable odors. The smoldering fire in the dump had not been entirely extinguished and no bulkhead had been constructed to confine the wastes and prevent them from being washed away.

Considering the fact that the present dump is located relatively near the built-up sections of both the village of Port Chester and Byram Point the greatest care should be exercised in maintaining the dump in such a manner as not to create a nuisance until the proposed incinerator is installed. If it is found to be impracticable to maintain the dump in a satisfactory sanitary manner some other site or method of disposal should be adopted.

It was therefore recommended in a report dated September 26, 1921:

1. That every effort be made by the village to hasten the awarding of the contract for and the construction of the proposed garbage and rubbish incinerator or to provide for some other suitable and sanitary method of disposal of its garbage and other refuse.
2. That all exposed refuse on the dump be properly covered with a layer of sand or soil sufficiently deep to permit the escape of objectionable odors and in no case less than 6 inches deep.
3. That until the incinerator is installed and put in operation or some other method of disposal is adopted the village authorities require that the present dump near Fox Island road be covered with a layer of sand or soil not less than 6 inches deep as soon as the refuse is deposited so that it will not be exposed to the atmosphere.
4. That if the present dump cannot be so maintained as to prevent the creation of a nuisance some other site more remote from the built-up sections, not only of Port Chester itself but also from Connecticut, be selected for the disposal of the refuse of the village.

Copies of this report were sent to the village authorities, to the complainant, to the health officer and sanitary supervisor on September 26, 1921, and the matter of carrying out the recommendations of this Department was taken up with the village.

In addition to the foregoing, inspections were made and reports transmitted to the local authorities or advice was given by correspondence in the matter of abatement of nuisances at the following places: Bay Shore, Bedford (town), Katonah, Candor, Concord (town), East Concord, Eastwood, Floyd (town), Granville (two inspections), Hempstead (town), Inwood, Ilion, Lawrence, Liberty (town), Milford, Newcastle (town), Chappaqua, New Rochelle, Pleasantville, Rosendale, Rye, Schenectady, Syracuse, Ticonderoga (town), Unadilla, Villenova (town), Westmoreland (town), Bartlett Station, and White Plains.

SPECIAL INVESTIGATIONS

INVESTIGATION OF SANITARY CONDITION OF STATE INSTITUTIONS

The work of examination of the sanitary condition of the institutions of the State, which this Department is required to make under the provisions of Section 14 of the Public Health Law, has been continued during 1921 so far as the facilities of the division permitted. These examinations are confined to the water supply, sewerage and sewage disposal, refuse disposal and milk supply of the institutions visited. Reports prepared upon these examinations, containing a description of the existing conditions together with the conclusions and recommendations of this Department in regard to the correction of insanitary conditions are transmitted to the authorities having charge of the institution, as required by the Public Health Law.

During 1921 the sanitary condition of the following twenty-four state institutions was examined and reported upon:

Albion (Western House of Refuge for Women).
Alfred (State School of Agriculture).
Auburn (State Prison).
Batavia (State School for the Blind).
Beacon (Matteawan State Hospital).
Bedford (State Reformatory for Women).
Brooklyn (State Hospital).
Buffalo (State Hospital).
Central Islip (State Hospital).
Comstock (Great Meadow Prison).
Elmira (State Reformatory).
Hudson (State Training School for Girls).
Newark (State School for Mental Defectives).
New York City (Randalls Island-New York House of Refuge).
New York City (Wards Island-Manhattan State Hospital).
Ogdensburgh (St. Lawrence State Hospital).
Ossining (Sing Sing State Prison).
Poughkeepsie (Hudson River State Hospital).
Rochester (State Hospital).
Rome (State Custodial Asylum).
Syracuse (State Institution for Feeble Minded Children).
Utica (State Hospital).
Willard (State Hospital).
Wingdale (State Prison).

INVESTIGATIONS OF SEWAGE DISPOSAL PLANTS

The investigations of municipal, institutional and private sewage disposal plants and works for the treatment of trade wastes have been confined during 1921 almost entirely to the inspection of plants concerning which complaints have been made to the department, or which were involved in questions of public water supply, or where requests have been made by the authorities in charge of the plants or by local boards of health for an investigation.

In each case a careful description of the construction and operation of the plants is obtained in the field and a report is prepared containing recommendations for any improvements necessary in the construction and operation of the plants. A copy of the report upon the investigation is transmitted to the local board of health, the sanitary supervisor of the district and to the local officials in charge of the plant.

The reports upon the investigations made by this Department in a few of the more important and typical cases of sewage disposal which have come before it during 1921 are given below and a list is appended of all other cases.

BOLTON (Town) Fenimore Hotel

An inspection of the disposal plant at the Fenimore hotel, Bolton Landing, Lake George, was made on September 27, 1921, at the request of the local health officer and the chairman of the committee on sanitation of the Lake George Association.

Fenimore hotel is located at Bolton Landing about 100 feet from the shore of Lake George and opposite Green Island. The hotel has sufficient capacity to accommodate about 40 guests. The water supply of the hotel is obtained from springs and is supplied to the hotel by gravity flow.

The sewage from the hotel is at present disposed of in 2 cesspools. One of these cesspools serves the laundry and is located back of the hotel at a considerable distance from the lake. It was claimed that this cesspool has operated satisfactorily. The other cesspool which serves the bathroom and kitchen is located under the front lawn between the hotel and lake shore. It appears that considerable trouble has been experienced in the past from the overflowing of the latter cesspool and that the local board of health and committee on sanitation advised the owner of the hotel to remedy these objectionable conditions created by such overflow and to install a new disposal plant which she has proceeded to do. The plans for the proposed plant, however, were not submitted to the State Engineer for approval inasmuch as neither the owner nor the local authorities were familiar with the provisions of the Public Health Law regarding the approval of plans and the issuance of permits for disposal of sewage.

This plant which was under construction at the time of the inspection is to consist of a new settling tank, the existing cesspool and 4 so-called filters or modified underdrained subsurface irrigation systems to be operated in series. The underdrain in the last filter is to discharge into Lake George. All but the settling tank and the first filter had been installed at the time of the inspection. The settling tank which is to be an enamel lined tank is to be divided into three compartments having a total capacity of 860 gallons. The filters are of different sizes but of similar design. The first filter is to be 10 feet x 6 feet x 18 inches deep. The three remaining filters are to be 10 feet x 6 feet x 18 inches deep; 25 feet x 6 feet x 18 inches deep and 6 feet x 6 feet x 5 feet deep respectively. The filter material consists of layers of cinders, gravel and sand placed and in the order named from the top to the bottom. The distributing system at each filter consists of lines of tile laid below the surface of the filter near the inlet of each bed. The lower third of each filter bed area is to be underdrained by a similar system of tile. The second filter bed is located in gravelly soil and the third filter bed is located partly in gravel and partly in clay.

As planned, the sewage from the sink and bathroom, estimated at 35 gallons per day per capita, is to be passed through a proposed metal settling tank, then through the first filter, then through the existing cesspools and then in series through the three so-called filters. The successive beds are so located that the underdrains from the upper filter will discharge into the distributing system of the succeeding lower filter. The underdrainage from the last filter is to be discharged into the lake. The plant was not completed and had not been put in operation at the time of the inspection. The hotel was being closed for the season.

It was pointed out to the owner of the hotel and to the local authorities that although disposal plants serving summer hotels may be operated at somewhat greater rate for a few months in the summer than when serving hotels open all the year round it was apparent that the proposed filters as designed, especially the first filter, were of inadequate size and would in all probability clog quickly in which case the sewage would probably break through the surface of the ground and create objectionable conditions. It was suggested therefore that the construction of the disposal plant be deferred until plans for the system are submitted to and receive the approval of the State Engineer as provided by chapter 510 of the Laws of 1921.

The following recommendations were therefore made in a report dated October 5, 1921:

1. That the work of constructing the disposal plant be suspended until plans for the system are submitted to and approved by the State Engineer.
2. That no permit be issued by the State Commissioner of Health until plans for the proposed system are approved by the State Engineer.
3. That before any sewage disposal plant is constructed at Lake George, plans for such plant be submitted to and receive the approval of the State Engineer.

On October 10, 1921, copies of the report were sent to the owner of the hotel, to the local board of health, to the Lake George Association, and to the State Engineer.

MT. MORRIS

An investigation of the sewerage and sewage disposal systems of the village of Mount Morris with special reference to the alleged nuisance created by the discharge of effluent from the village sewage disposal plants into a tail race which runs through the eastern part of the village was made on December 1, 1921, as a result of a complaint received by the Department to the effect that the tail race into which the effluent is discharged has been abandoned so that there is little or no water flowing in it with the result that a nuisance affecting the health of the tenants of a large farm below the plant is created.

The village of Mount Morris which has a population of about 3,300 according to the last census is located in the western part of Livingston county near the confluence of the Genesee river and Canaseraga creek. It is provided with a public water supply which serves practically the entire village. The water supply, which is obtained from Silver Lake, is passed through pressure mechanical filters and chlorinated before it is delivered to the mains. The daily water consumption is estimated at from 500,000 to 700,000 gallons per day of which the Delaware, Lackawanna and Western railroad uses about 200,000 gallons per day. The average water consumption, therefore, ranges from 90 to 150 gallons per capita per day.

The records of the Department show that the original plans for a separate sewer system and for a sewage disposal plant consisting of septic tanks and intermittent sand filters to be located on the flats east of the Pennsylvania track near the foot of Murray street extended were approved on September 1, 1905. These plans, however, were not carried out and on November 10, 1914. amended plans for sewerage and sewage disposal were approved after having been revised to meet our requirements.

The amended plans provided for modifications and additions to the original sewer system and for the installation of two sewage disposal plants each consisting of an Imhoff tank and a sludge drying bed in place of the septic tanks and sand filters originally planned. The small tank which was to be located on the southerly side of State street some 500 feet below Mill street was designed to care for an ultimate population of 700. The large tank was designed to care for an ultimate population of about 3,100. The effluent of these two plants was to discharge temporarily into the tail race a short distance above the culvert under the Delaware, Lackawanna & Western railroad tracks. The plans however showed an 18-inch outlet sewer extending from the temporary outlet to Canaseraga creek, a distance of about 1 mile below the temporary outlet. The plans also included general plans for sand filters. Permission was granted to temporarily omit the construction of the sand filters and the portion of the outlet sewer below the railroad.

It was found from the recent inspection that the sewerage and sewage disposal systems had been constructed in 1915 in substantial conformity with the approved plans. It was estimated that about 75 per cent of the population or about 300 persons are connected with the sewer system. About 2,250 persons served by sewers contribute sewage to the main sewage disposal plant located on the easterly side of the Pennsylvania railroad near Murray street. About 150 persons are served by sewers connected with the small plant.

The inspection of the main disposal plant showed that it was producing a fairly satisfactory effluent. The settling compartment of the tank was, however, covered with a thick blanket of scum and it appeared that it has not been the practice to remove the scum which accumulates in the settling compartment. It is important that the scum be removed at least every other day and not be allowed to accumulate in this compartment as a large portion of it will ultimately be carried over the weir into the effluent pipe if not removed. The scum removed from the settling compartment could appropriately be deposited in the shaft connected with the sludge compartment. The sloping sides of the partitions between the settling compartment should also be squeegeed not less than once a week in order to prevent the accumulation of sludge on these sloping walls.

It was learned that it has been the practice to remove the sludge from the large settling tank only twice a year, early in the spring and late in the fall. Although with the relatively small population served by the settling tank at present this practice has probably not seriously interfered with the operation of the tank. Better results would, however, be obtained if the sludge were removed at intervals of not less than six weeks or two months between April and November. It should not be necessary and would probably not be advisable to remove any sludge between the first of December and the first of April, inasmuch as the sludge would not dry out during freezing weather to a sufficient extent to permit of its removal from the sludge bed by spading. The sludge found on the drying bed, which it was claimed had been removed from the tank about November 1, still contained considerable moisture which however was probably due in part to the recent heavy rains. No objectionable odors were observed coming from the sludge bed except in the immediate vicinity of the bed when in line with the wind from the bed.

An inspection of the small tank indicated that it is practically in the same condition as the large tank. There was considerable scum in the settling compartment. This scum should be removed regularly and not allowed to accumulate. From a statement made by the superintendent of waterworks, who has charge of the operation of the plant, it appears that sludge has been removed from the small plant only once or twice since it was constructed in 1915. Although only about one-quarter as many people are served by this plant as the design called for the sludge should be removed regularly as in the case of the large tank.

An examination of the outlet from the disposal plant and the tail race showed that the flow in the tail race was entirely inadequate to provide for sufficient dilution of the effluent to prevent the creation of a nuisance. Although there had been very heavy rains for a few days before the time of the inspection there was less than twice as much water flowing in the tail race as effluent discharged into it. A large area of the bed of the stream between the outlet of the disposal plant and the culvert under the railroad bridge was covered with sludge in a state of putrefaction. This accumulation of sludge was due partly to the fact that the settling compartments of the settling tank are not kept free from scum thereby allowing solids to be carried out over the outlet weirs but principally to the fact that there is at present insufficient flow in the tail race to dilute the effluent and carry it down to Canaseraga creek. The visual effects of the pollution of the tail race disappeared before the confluence of the tail race with the creek. This was due largely to the high water in Canaseraga creek from the recent heavy rains which had caused the water from the creek to back up into the tail race and partly to the turbid nature of the creek.

When the plans for sewerage and sewage disposal were submitted for approval we were advised by the designing engineer that during the summer months nearly the entire flow of the Genesee river was diverted and carried into the power canal above the tail race and that the minimum flow in the tail race was at that time about 100 cubic feet per second. It was considered that this flow was more than adequate to provide for a proper dilution of the effluent from the settling tanks and that no nuisance would be created. Some three years ago, however, a hydroelectric power plant was constructed at the dam in the Genesee river near the head of the old power canal and during the past summer the entrance to the old power canal has been closed and all of the water from the Genesee river has been used either for power purposes at the new power plant, the tail race of which discharges into the river and not through the old power canal or has passed over the dam. The only flow reaching the tail race has been that due to a slight leakage in the gate near the river and from the contribution of a very small stream which flows through the central portion of the village and empties into the old hydraulic canal. This flow is entirely inadequate to provide for a satisfactory dilution of the effluent from the disposal plant.

At the time of the inspection the power plant was using only a portion of the flow of the Genesee river and large quantities of water were flowing over the dam and wasted. It would appear that during a large part of the year the flow in the river is in excess of that used by the power plant and that sufficient water could probably be diverted into the old hydraulic canal and tailrace to dilute the effluent from the village disposal plants and prevent the creation of a nuisance until the effluent pipe can be extended to Canaseraga creek.

One of the tenants on the farm located above the point of discharge of the tail race into Canaseraga creek was interviewed. It was stated by her that during the past summer and until the recent high water occurred in Canaseraga creek, which caused the backing up of water from the creek into the tail race, a very serious nuisance was created which affected not only herself but also her neighbors. It was alleged that the water supply of the farm which was formerly derived from a driven well located near the farmhouse, about one hundred feet from the tail race, had become so polluted by seepage from the tail race that it has been necessary to abandon the use of this water for drinking purposes. It was also claimed that until the water entering the tail race was shut off last spring no nuisance was created by the discharge of effluent from the disposal plants of the village.

It was therefore recommended in a report dated December 12, 1921:

1. That the village authorities be notified to extend the effluent pipe from the disposal plants to Canaseraga creek as provided by the approved plans and stipulated by the permit issued in connection with these plans and to have this effluent pipe in operation on or before June 1, 1922.

2. That until the effluent pipe can be extended to Canaseraga creek, the village authorities arrange with the power company, if possible, to divert sufficient water to the old hydraulic canal and tail race to dilute the effluent and prevent the creation of a nuisance.

3. That the operation of the disposal plants be modified in the following respects:

   (a) That the scum which accumulates in the settling compartments of the settling tanks be removed not less than once every other day.

   (b) That the sloping wall of the partitions between the settling and sludge compartments be squeegeed at least once a week.

   (c) That the sludge be drawn from the settling tanks at least every six or eight weeks between the months of April and November.

Copies of this report were sent on December 16, 1921, to the village authorities, to the local health officer and to the complainant. On the same date the municipal board of the village of Mount Morris was notified to extend the outlet pipe shown by the plans approved on November 10, 1914, from the temporary outlet near the Delaware, Lackawanna and Western railroad bridge to Canaseraga creek and to have said outlet pipe completed and put in operation by June 1, 1922.

PELHAM

An investigation was made by Mr. A. I. Howd of this Department on June 7, 1921, of the sewage disposal plant of the town of Pelham, Westchester county, N. Y.

The town of Pelham is situated in the southcentral part of Westchester county a short distance north of New York city between the city of Mount Vernon on the west and the city of New Rochelle on the east. The incorporated villages of Pelham, North Pelham and Pelham Manor comprise the town. They are provided with a water supply furnished principally by the New Rochelle Water Company, practically all of the residents being supplied. The town has a population of about 5,000.

The sewage disposal plant for the town is located in the village of Pelham Manor on the east side of the Hutchinson river. The disposal works consist of a screen and grit chamber, settling tanks, pumping plant, dosing tank and sprinkling filters. Previous inspections of the operation of the plant have been made by this Division in 1914 and 1918.

The whole of the village of Pelham and all of North Pelham are served by sewer systems tributary to the Pelham sewage disposal plant except a small area of about 30 acres, comprising about one-tenth of the area of North Pelham, the sewage from which is discharged into the Mount Vernon sewer system. The sewage from a small area in the southern part of Pelham Manor is discharged into a series of so-called liquefying tanks, the effluent from which is discharged into Long Island sound. The sewage from about 35 per cent of the area of the village of Pelham Manor flows by gravity to a pumping station, known as the Mt. Tom pumping station, from which it is pumped through 2,000 feet of force main to a point on Pelhamdale avenue where it empties into a sewer which carries it by gravity to the Pelham sewage disposal plant. The remainder of the village is served by a gravity system which conducts the sewage to the main sewage disposal plant.

The sewage from the different sections of the town flows through three main trunk sewers to a manhole outside the sewage disposal plant. There is a by-pass from this manhole through which raw sewage may be discharged direct into the creek. The by-pass is provided with a valve which will prevent sewage being discharged into the creek except at the discretion of the operator of the plant, but which does not prevent water from the creek backing up into the sewage disposal plant at times of high water.

The sewage enters the disposal plant through a screen and grit chamber located under the floor of a building which also houses the settling tanks, pumping plant and dosing chambers. The screens, which are of the bar type, were so clogged at the time of the inspection that the sewage was running over the top of the screens. It was learned from the attendant at the plant that the screens had not been cleaned for a considerable time and that the grit chamber was cleaned about two months previous to the inspection. According to the attendant, the grit chamber is cleaned about every three months, the cleanings being buried near the plant. The clogging of the screens caused the sewage to back up in the sewers approaching the plant, a manhole 300 or 400 feet from the plant being virtually filled with sewage.

The settling tanks are divided into four units, the two northerly units being in operation at the time of the inspection. The capacity of the two units is about 78,600 gallons which provides an average detention period for the sewage of about 2 hours. These units had been in continuous use for about two months. A considerable portion of the sewage in the tanks was covered with a thick, crusted brown scum. The tanks not in use were filled with water. The sludge is emptied from the tanks from time to time and was said by the attendant to be buried in the ground near the plant.

The dosing tanks and automatic siphons were not operating properly at the time of the inspection. The dosing tanks were not emptied in rotation and the periods of dosing and resting of the filters were irregular. Observations were made about noon which indicated at that time that Bed No. 1 was being dosed for a period of about one minute and was resting for about two minutes between doses. Bed No. 3 was being dosed for periods ranging from 15 seconds to 1 minute 20 seconds and was resting from 1 minute 45 seconds to 2 minutes 40 seconds. Bed No. 2 was not dosed during the observations. Later in the afternoon observations were continued. Bed No. 2 dosed for 5½ minutes evidently for the first time in several hours. About one-half hour later Bed No. 3 was dosed for 6¼ minutes and near the end of the dose Bed No. 1 began to dose and was dosed for nearly 9 minutes. The beds were not dosed again during the remainder of the observations, Bed No. 2 having rested for an hour.

The sprinkling filters were being operated at an average rate of about 1,670,000 gallons per acre per day. It appeared at the time of the inspection that the center unit was operating considerably below this rate and the other two units considerably in excess of this rate. Several of the sprinkler nozzles in the center unit were clogged and in need of cleaning.

The effluent from the sprinkling filters was somewhat cloudy but apparently free from large particles of suspended matter. The stream into which the sewage is discharged is grossly polluted and the black muck on the banks of the creek presents a very unsightly appearance at low tide.

It was evident at the time of the inspection that the sewers were receiving excessive amounts of ground water and probably large quantities of storm water. This condition was plainly noticeable at a manhole on Pelhamdale avenue where sewage empties from the force main from the Mt. Tom pumping station into the gravity system. The sewage was quite clear and at the time free from any large particles.

It was impossible at the time of the inspection to make satisfactory observations as to the distance from the plant at which odors might be detected. While the inspection was being made at the plant, the wind was in the east carrying any odors that might arise across the river toward Mount Vernon. An attempt was made during the afternoon to observe odors from the Mount Vernon shore but before any satisfactory observation was made the wind shifted to the west.

It is evident as a result of the inspection that the sewage disposal plant of the town of Pelham is not being satisfactorily operated and several conditions should be immediately remedied.

The by-pass to the river from the manhole on the main sewer leading to the plant and located just outside the main building, should be removed or satisfactorily sealed. Its existence and use defeats the purpose for which the sewage disposal plant was constructed and is being operated, and furthermore, the discharge of raw sewage into the Hutchinson river through this by-pass is a violation of the public health law. This Department has recommended a number of times in the past that this by-pass be removed or sealed.

The screens in the screen and grit chamber should be cleaned several times a day or as often as is necessary to prevent sewage flowing over screens and so that they may be used for the purpose for which they were intended. The screenings should be removed and disposed of in a satisfactory sanitary manner. Under no condition should the screenings be pushed or discharged into the channel leading to the settling tank or be discharged into the Hutchinson river.

The discharge of sewage from the pumps into the dosing tanks should be more evenly regulated. It appeared at the time of the inspection that the middle dosing chamber received less sewage than the other chambers, since the middle sprinkling filter unit discharged less often than the end filter units. This lack of uniformity of distribution of sewage to the dosing tanks might possibly be corrected by increasing or decreasing the size of the openings from the distribution channel to the various dosing tanks.

The siphons, particularly those serving Bed No. 1 and Bed No. 3, should be overhauled and put in a proper operating condition so that all the sewage in the dosing tank shall be discharged in one dose and not allowed to dribble intermittently for several minutes.

In a report dated July 23, 1921, the following recommendations were made:

1. That the by-pass allowing raw sewage to pass directly to the Hutchinson river be entirely sealed up or removed and if any overflow is deemed necessary, that an overflow be provided for the effluent from the settling tanks to be used only in case of emergency such as the breaking down of the pumps.
2. That the screens be cleaned regularly and as often as may be necessary to prevent their clogging.
3. That provision be made for the disposal of the screenings in a sanitary manner.
4. That the openings in the distribution channel discharging settling tank effluent into the dosing chamber be so modified that uniform distribution of the settling tank effluent over the sprinkling filters may be effected.
5. That the clogged sprinkling filter nozzles or risers be cleaned.
6. That a competent sanitary engineer be employed to design and prepare plans for a sludge drying bed for the proper disposal of sludge from the plant.
7. That the town authorities in charge of the sewage disposal plant employ a competent sanitary engineer to have charge of the operation and maintenance of the sewage disposal plant.
8. That the town authorities provide for a comprehensive survey of the town to determine from what sources water from catch basins, drains, or roof leaders may enter the sewer system and require the immediate disconnection of all such sources.

Copies of the report were sent to the local boards of health of the town of Pelham and the village of Pelham Manor, to the sanitary supervisor of the district and to the board of sewer commissioners of Pelham.

SARATOGA COUNTY TUBERCULOSIS HOSPITAL

An investigation of the sewage disposal plant of the Saratoga County Tuberculosis Hospital was made by Mr. W. C. Emigh, assistant engineer in this Department, on April 29, 1921. The investigation was made following a communication from A. R. Dimock, M. D., superintendent of the hospital, to this Department under date of April 22, 1921, in which he requested that an engineer visit the hospital to advise regarding the disposal plant.

Plans were approved on August 20, 1913, for a sewage disposal plant to treat the sewage of the Saratoga County Tuberculosis Hospital. The recent inspection by our engineer indicated that, in general, the plant had been constructed in conformity with the approved plans, although a few details of construction differed from those shown. The essential features of the plant comprise a settling tank, a sludge drying bed, a dosing chamber, a sprinkling filter, a final settling tank and a subsurface irrigation system. The plant was originally designed to care for the sewage from 75 persons under the usual assumptions as to quantity of sewage contributed per capita. The plant is located at a distance of about 700 feet from the administration building, but is in somewhat closer proximity to other structures.

The sewage is conveyed from the hospital in a 6-inch sewer to a concrete settling tank, the inlet and outlet of which are each trapped. The tank is 5 x 15 feet in plan with a depth below the flow line of 6 feet. The floor is flat and a shear-gate at the floor level permits the discharge of accumulated sludge on to a sludge drying bed. At the time of the inspection a heavy scum was found in the tank, but no considerable quantity of sludge.

The dosing tank is of concrete, 4 x 5 feet in plan; is located adjacent to the settling tank, and is of integral construction therewith. It is equipped with a 5-inch automatic Miller dosing siphon. Both the settling tank and dosing tank are provided with a concrete roof through which manholes afford access to the interiors. At the time of the inspection it was found that the siphon was not in operation and upon removing the bell the air piping was found to be clogged. It could not be learned that the siphon had operated for a considerable time.

The sprinkling filter is located at a distance of about 30 feet from the dosing tank. It is 15 feet square with a depth below the surface, as shown by the plans, of 5 feet. The plans and report on the examination of same indicate that the filtering medium was to consist of screened gravel, ranging in size from ¾ inches to 2 inches. The distribution system was to be of cast-iron pipe with 4 nozzles of the Taylor square spray type placed 8 feet on centers at the corners of a square. The drainage system consists of 6-inch split tile pipe. It appears that a minimum head on the nozzles of about 2 feet is obtained. A roof is provided over the filter, the underside of which is 4 feet above the surface of the bed. Access to the filter is afforded by manholes fitted with cast-iron frames and covers. At the time of the inspection it was found that the nozzles had been removed or broken and that for some time the sewage had flowed directly on to the surface of the bed. A surface area of 225 square feet is provided by the filter. With a flow of 7,500 gallons of sewage per day and a 5-foot depth of filter, a rate of operation of 290,000 gallons per day per acre per foot of depth of filter results. This rate is within allowable limits.

In order to obtain a satisfactory operation and purification of sewage it will be necessary to thoroughly overhaul the unit and place it in proper condition. The gravel should be entirely removed and if found to be properly graded, as originally specified, may be thoroughly cleaned and replaced. It is possible, however, that it will be found more economical to procure new gravel from local beds. New nozzles should be installed and, if it is found that the distribution system is clogged, it should be thoroughly cleaned. When the gravel is removed the under drainage system should be carefully examined and cleaned if necessary. Although openings are provided in the filter walls it would be advisable to assure a circulation of air by the removal of the manhole covers and the substitution of ventilators with louvres as pointed out in the report on the examination of the plans.

The final settling tank is at the end of the filter and is of integral construction therewith. It is 3 x 15 feet in plan and the floor of the tank, as shown on the plans, is about 18 inches below that of the filter. A considerable quantity of gravel was found in the bottom of the tank, filling it nearly to the level of the underdrains from the filter. The plans show the outlet pipe from the final settling tank flush with the floor of the tank. As pointed out in the report on the examination of the plans, the invert of this pipe should be within an inch or two of the elevation of the floor of the filter. If the pipe was not so placed at the time of the construction it should be done at this time.

On the plans a connection was shown from the final settling chamber to the sludge drying bed, but as the elevation of the floor of the chamber is below that of the surface of the bed, it would not be possible to draw off the accumulated sludge by means of such a connection. Whether or not the connection was installed was not learned but it is important that provision be made for the withdrawal of the sludge. A small sludge drying bed should be constructed at a sufficiently low elevation to permit the sludge from the final settling tank to flow to it by gravity. Such a bed may be constructed with earthen banks at comparatively small expense.

From the final settling tank the effluent flows into a 10-inch vitrified tile pipe with open joints which extends a distance of 100 feet to the brow of a small ravine sloping to a stream. From that point it continues about 300 feet down stream paralleling the brow of the ravine. At a depth of 5 feet below the first pipe line is a second line with open joints intended to act as a sub-soil drain facilitating the absorption of the filter effluent. At the time of the investigation sewage was flowing from the upper pipe through the soil to the ground surface at a point near the first angle in the line and at a second point a short distance down stream from the first. It appeared that, owing to the discharge of unfiltered sewage into the subsurface absorption system, which was originally designed to receive the filtered effluent, the ground had become clogged resulting in the sewage breaking through to the surface.

Inasmuch as the stream is not used as a source of water supply, the plant, if placed in good condition and properly operated with final settlement should produce an effluent which may properly be discharged into the stream. If it is decided to continue the discharge into a subsurface irrigation system the present piping should be flushed or otherwise cleaned and placed in proper condition. It is quite possible that the ground in the proximity of the drains has become so clogged by the discharge of unfiltered sewage that it will become necessary to relocate the system in order to obtain complete absorption. If, on the other hand, the effluent is to be discharged directly into the brook the outfall sewer should be continued to the bed of the stream, thereby avoiding any possible nuisance which may result from the discharge of the effluent on to the ground surface without dilution.

It is important that the necessity for careful operation be appreciated by the attendant. It is also advisable that some supervision be exercised to assure the continued satisfactory functioning of the plant after the needed repairs, alterations and additions have been effected. Plans for all additions or alterations involving a departure from the plans already approved should be submitted to this Department for approval.

In a report dated May 17, 1921, it was pointed out that the plant was constructed in general conformity with plans approved by this Department, but that through lack of attention it has ceased to function properly.

It was, therefore, recommended:

1. That the settling tank be cleaned by the removal of the scum from the surface of the contents.
2. That the automatic dosing siphon be cleaned and placed in proper operating condition.
3. That the filtering medium in the sprinkling filter be removed and either thoroughly cleaned and replaced, or that new material, properly graded, be installed.

4. That new nozzles be installed on the distribution system and that the distribution system be cleaned, if necessary.

5. That the final settling tank be thoroughly cleaned and that the outlet therefrom be raised to an elevation not lower than 2 inches below that of the floor of the filter.

6. That a sludge drying bed be constructed with proper connections for the withdrawal and drying of sludge from the final settling tank, plans for which should be submitted to this Department for approval.

7. That the outfall sewer be extended to discharge into the water of the stream, or that the present subsurface absorption system be cleaned and relaid. If the outfall sewer is extended plans for such extension should be submitted to the Department for approval.

8. That at all times the plant be carefully operated and that intelligent supervision be exercised.

On May 17, 1921, copies of this report were sent to Dr. James S. Walton, sanitary supervisor of the district, and to the superintendent of the hospital.

In addition to the foregoing, inspections were made and reports transmitted to the local authorities or advice was given through correspondence with reference to the disposal of sewage at the following places:

Altamont, Baldwinsville, Chautauqua County Tuberculosis Hospital, Columbia County Tuberculosis Hospital, Copake, East Syracuse, Herkimer County Tuberculosis Hospital, Hoosick (town) (school), Mt. Pleasant (town),Pocantico Hills Estate, Naples (Naples academy), Nassau County Tuberculosis Hospital; Newcastle (town) Children's Convalescent home, New Rochelle, Orangetown (town) Lederle Antitoxin Laboratories, Phillipstown (town) Surprise Lake camp, Pomfret (town) Lilly Dale assembly, Stamford and Yonkers (Colonial Heights).

INVESTIGATIONS OF MILK PASTEURIZING PLANTS

The investigation of the sanitary condition, equipment, and method of operating of milk pasteurizing plants in this State was begun in 1917 and was continued until July, 1921, when, due to the reorganization of this Division, it became necessary to temporarily suspend this work. Some 190 plants were inspected during 1921. The investigation has been confined largely to plants which do not ship their products wholly or in part to the City of New York, and which are not inspected by the New York City Department of Health. A report on the inspection of a plant is, in each case, prepared and transmitted to the owner of the plant and to the local health officer of the community in which the plant is located. In these reports the results of the inspections are set forth, the general sanitary conditions of the plants are described and recommendations for improvements are made. As a result of the carrying out of the recommendations made by this Division in the past the sanitary conditions of milk pasteurizing plants have been greatly improved and a better grade of milk throughout the State has been obtained.

MOSQUITO EXTERMINATION (Nassau County)

The Nassau County Mosquito Extermination Commission has continued the work of mosquito extermination in that county during the year of 1921 as provided by chapter 408 of the Laws of 1916 and in accordance with said law under date of June 28, 1921, submitted to the State Commissioner of Health the annual report of the work of the Commission for the calendar year 1920. The tentative budget of the Commission for the year 1922 was submitted to the State Commissioner of Health for approval under date of August 9, 1921. A list of the property both salt marsh and upland, with a description thereof, upon which the Nassau County Mosquito Extermination Commission proposes to enter during the year 1922 for the purpose of mosquito extermination was attached to the budget. The report referred to is printed below.

The report of the Director of the Division of Sanitation covering the examination of the estimates, plans and methods is also presented below. These estimates, plans and methods were approved by the State Commissioner of Health on September 17, 1921, and forwarded to the Chairman of the Board of Supervisors of Nassau County and to the Nassau County Mosquito Extermination Commission on September 19, 1921.

DR. HERMANN M. BIGGS, *State Commissioner of Health:*

The Nassau County Mosquito Extermination Commission is composed of the following members: Hiram R. Smith, Freeport, L. I., president; Abraham Adelberg, Cedarhurst, L. I., treasurer; Daniel Morrison, Freeport, L. I.; Dr. Arthur D. Jaques, Lynbrook, L. I.; Irving Cox, Mill Neck, L. I.; John T. Pratt, Glen Cove, L. I.; James H. Dayton, Lynbrook, L. I., secretary. The field work is under the supervision of William H. DeMott.

Our work is carried on under the general headings, Salt Marsh, South Shore Upland, North Shore Upland, and Winter Operations. Therefore our report will follow these capitulations.

Salt Marsh

The salt marsh maintenance and patrol work began on April 15, with a crew of 10 men. Our ditched areas were divided into four sections as in 1919. Each section was placed in charge of an inspector who acted as a labor foreman. The 4,685,870 feet of ditches were covered five times at a cost of $9,754.03; 13,619 feet of spurs and 10,643 feet of mains were installed.

A marked decrease of salt marsh mosquitoes was found from Inwood to Merrick, a distance of 11 miles on the South Shore, and no salt marsh mosquitoes on the North Shore from Great Neck to Cold Spring Harbor, a distance of 17 miles. This proves the adequacy of salt marsh drainage work.

South Shore Upland

The work in this district was carried on by a district inspector, four inspectors, a labor foreman, and four laborers.

Following is a summary of their work:

Total number of inspections	4,250
Total number of gallons of oil used	4.500
Total number of times breeding killed	342
Total footage new ditches installed	17.330
Total footage old ditches cleaned	31,330
Total number of swamps drained	13
Total number of swamps lowered	4
Total number of wet areas drained	7

There was a total of 280 violations, 2 of which have been entirely eliminated. Six hundred catch basins were oiled every week.

North Shore Upland

The work in this district was carried on by a District Inspector, and the same number of inspectors and laborers as on the South Shore Upland. On April 16, the inspectors started a spring oiling of all the swamps from Great Neck to Cold Spring Harbor, using 1,325 gallons of oil. This season the swamp mosquito was almost unknown in the county.

The installation of new ditches and the maintenance work was in charge of the foreman with four laborers.

Following is a summary of the work in the district:

Total number of inspections	7,922
Total number of gallons of oil used	11,328
Total number of times breeding killed	1,528
Total footage new ditches installed	10.484
Total footage old ditches cleaned	626,899
Total footage old ditches recleaned	12,425
Total footage pond edges cleaned	5,000
Total number of swamps drained	1
Total number of violations	395

The Mill Pond and Leeds Lake, Manhasset, Mill Pond, Roslyn, Large Pond, North Shore Country Club, and Mill Pond, Oyster Bay were lowered every two weeks. The Public Swamp at Great Neck was drained by installing a marginal ditch, 8,716 feet long, connecting with the brook that runs into Manhasset Bay.

If a comparison is made of the work accomplished in the two upland districts, it should be remembered that the work has been carried on longer on the North Shore than on the South Shore.

The following table shows the breeding percentage in the upland districts:

	South Shore Per Cent	*North Shore* Per Cent
Culex	35	49.2
Aedes	59	12
Anopheles	6	38.8

The main object, particularly on the North Shore, has been the elimination of malaria. The Commission has worked with untiring efforts for the last four years to establish the following record for the county; this shows the number of malaria cases for each year since 1916.

	Previous to 1916	Annually since 1916 1916	1917	1918	1919	1920
New cases	475	56	51	5	3	0

There is no doubt that our work has effected an absolute control of malaria conditions that a few years ago were alarming.

Winter Operations

In previous years it has been the custom to suspend salt marsh work on September 30. This year, using a spade developed by the Chief Engineer of the Commission, we installed 17,605 feet of main 10 x 30 ditches at a cost of 2 cents per foot, and 100,503 feet of spur, 8 x 20 ditches at a cost of 1 cent per foot, with an additional expenditure of $675.00 for measuring, staking, and supervision. The work commenced on October 1st and continued until December 31st. This method of installing our own ditches has proved more economical than letting a contract for the work, and more satisfactory since we can dig ditches in places that cannot be reached by a machine.

On the upland, two inspectors on the North Shore, and two on the South Shore, were employed throughout the winter months. They cleaned ditches and streams, and removed vegetation which can not be removed during the summer months because of the prolific growth. This means was used in order to avoid delay in the usual spring inspection and oiling.

During the inclement weather the District Inspectors worked on maps and charts, and prepared a schedule for the ensuing year. The inspectors worked in the garage assisting the mechanic in overhauling and painting the cars and boats.

The office force consisted of the Chief Engineer, in charge of the work on the field, the Secretary of the Commission, and one confidential clerk and stenographer.

1922 Tentative Budget

In submitting our 1922 tentative budget of $72,000 for estimated expenses, we invite your attention to the proposed plans for the work of the coming year.

An expenditure of $19,260 is apportioned to the Salt Marsh. This sum includes $14,160 for maintenance and patrol of more than 5,000,000 feet of ditches installed from the New York city line on the west, to Seaford creek, Seaford, on the east; $3,000 for the installation of approximately 150,000 feet of new ditches on the mainland and island areas east of Seaford creek, and at High Hill beach, and $2,100 for the salary of a Salt Marsh District Inspector who supervises all salt marsh work in the summer and in the fall, winter, and spring has full charge of the new ditching work. No more salt marsh ditching contracts will be issued by the Commission, as we are installing all new ditches with the hand spades invented by Mr. William H. DeMott, Chief Engineer.

Our upland work is divided into two districts, South Shore and North Shore. The sum of $10,476 is set aside for the South Shore, providing $4,200 for inspection, and oiling when necessary of all ponds, swamps, brooks, and wet areas from Inwood to Freeport; also to maintain an efficient number of men throughout the winter months to patrol; $4,176 for a labor crew consisting of a foreman and six laborers to do maintenance work and a limited amount of permanent elimination over the same territory, and $2,100 for the salary of a District Inspector who supervises the upland work in the summer, and in the winter prepares maps and charts and lays out the plan of work for the coming year.

The sum of $10,476 for the North Shore provides for a District Inspector, four inspectors, and a labor crew whose duties are the same as the South Shore upland force.

The sum of $1,200 provides for two inspectors who will carry on a systematic house to house campaign in the villages of Freeport and Rockville Centre or Lynbrook from May 1 to September 30.

The administration item of $7,000 includes the salaries of the chief engineer, secretary, and clerk.

Operating expenses in the amount of $17,001.50 include the running expenses of the eight cars and four boats, the wages of the mechanic, the overhead costs of garage, boat house, and office rent, boat hire, mosquito oil for temporary extermination purposes, equipment as itemized, insurance, office

expenses, publicity, and supplies which include all tools used in the fi
both upland and salt marsh. These estimates of quantities and expen
tures are all based on the actual amounts and cost of corresponding ite
during the current year.

Five thousand dollars is allowed to drain Beaver swamp, south of
railroad tracks, a bad malaria mosquito breeding place at Mill Neck, L

The contingent fund of $1,586.50 is to cover any unforeseen circumstan
that may arise throughout the year.

Respectfully submitted,

THE NASSAU COUNTY MOSQUITO EXTERMINATION COMMISSI

HIRAM R. SMITH,

Presiden

(A budget with a general description of the proposed amounts for w
to be carried on in 1922 and a list of property owners with a general descr
tion of the property on which the work of the Commission is to be carr
on in 1922 was attached to the above but is not here included.)

HERMANN M. BIGGS, M. D., *State Commissioner of Health:*

I wish to submit the following report upon an examination of the pla
estimates and methods for mosquito extermination work in Nassau cou
for the year 1922, submitted for your approval by the Nassau County M
quito Extermination Commission. The following plans, estimates and pap
were formally submitted on August 31, 1921:

1. A map of Nassau county showing the salt marshes planned to
drained or ditched by the Commission in 1922 and the areas be
drained in 1921. This map also shows the areas drained in the p
those yet to be drained, and the violations under control in the cou
during the season 1920–21.
2. A signed statement or memoranda explaining the plans and meth
of operation proposed by the Commission for 1922.
3. A detailed estimate or budget of moneys required to meet the
penditure proposed to accomplish the work indicated on the plan d
ing the year 1922, and described in the memoranda attached to
estimate.
4. A list of properties, with a general description thereof upon wh
the Nassau County Mosquito Extermination Commission proposes
enter during the year 1922 for the purpose of mosquito extermination
5. Information and instructions in detail as to the methods to be f
lowed in eliminating the local breeding places of mosquitoes are giv
in a copy of a printed notice which the Commission has issued to
property owners.

The total estimate or budget for the ensuing year amounts to $72,0
which is $2,000 less than the budget for the present year. The expenditu
proposed are placed in the budget under the following general headings:

I. Salt marsh district.
II. South shore upland.
III. North shore upland.
IV. House to house inspection.
V. Administration.
VI. Operating expenses.
VII. New drainage work.
VIII. Contingent fund.

It seems that approximately one-third of the budget is to be devoted
marsh and swamp work, one-third to upland mosquito control work and th
the remaining third appears planned to be about equally divided betwe
operating and overhead expenses.

It will be also seen from the comparative annual estimates that wh
approximately the same amount is to be spent for swamp and marsh drain

as during the present year, the marsh ditching will be about one-half that done the previous year, while the swamp cleaning or drainage like the house to house inspection, appears to mark an advanced step on the part of the Commission. The salt marsh drainage proposed will, however, eliminate about half the remaining mosquito marsh between that already treated and the Suffolk county line.

A new feature which is to be noted in the proposed draining or cleaning of breeding places for malarial mosquitoes known as Beaver Swamp. This swamp is located south of the railroad right of way near Mill Neck in the northern part of the county and $5,000 is provided in the budget for its treatment. Another new feature is a provision of $1,200 for intensive house to house inspection during warm weather.

The force planned to be employed consists as during the previous year of 11 employed the year around and about 44 additional men employed during warm weather. No reduction in insurance or in compensation is shown which latter may be explained by the fact that specially trained employees are necessary to do this specialized work and most employees are only engaged during that part of the year when more attractive work is plentiful. Beside these men others will be employed by contract on work in Beaver Swamp and in mosquito ditch excavation which is estimated at two cents per foot as compared with three cents in last year's estimate.

It appears from the above and from the plans, estimates and methods described in the statement submitted by the Commission for work to be carried on in 1922, that careful study has been given by the Commission to the relative amounts which should be apportioned to the various phases of the work in such a manner as to produce the best results. While no attempt has been made to analyze in detail the items of cost, a comparison with previous work here and elsewhere indicates that the work for 1922 has been efficiently planned and reasonably estimated upon by the Commission and warrants your approval.

It was, therefore, recommended that the estimates, plans and methods as submitted covering the year 1922 be approved in accordance with the provisions of section 412 of chapter 408 of the Laws of 1916, and that they be forwarded to the Board of Supervisors of Nassau county.

Respectfully submitted,

C. A. HOLMQUIST,
Director, Division of Sanitation.

ALBANY, N. Y., *September* 17, 1921.

PALISADES INTERSTATE PARK

At the request of the Public Health Council the Engineering Division (Division of Sanitation) made a sanitary survey of the Palisades Interstate Park. This park consisting of some 36,000 acres is located between the Palisades along the Hudson river and the Ramapo mountains, partly in the State of New York and partly in the State of New Jersey. It is controlled by a Commission appointed by the Governors of the two states and supported by appropriations from the states and by private contributions.

Some 60 camps are maintained throughout the park which, together with boats, camp equipment and other facilities are rented to acceptable and responsible organizations. In addition permits for individual camps are issued. Each of these permanent camps is supplied with water and sewerage facilities. The sanitary survey of the Park includes detailed studies and inspections of the water supply and the method of disposal of the sewage at each camp. An investigation was also made of the bathing beaches maintained by the Commission along the Hudson river in the State of New Jersey.

The reports upon the sanitary survey and the investigation of the bathing beaches of the Palisades Interstate Park follow.

An investigation of the Palisades Interstate Park with especial reference to the water supply, sewage disposal and general sanitary conditions of the various camps, parks and bathing beaches maintained throughout the park, was made by Mr. Earl Devendorf, assistant engineer in this Department, during the period extending from August 10 to September 4, 1920.

This investigation was made at the request of the public health council, and our engineer was assisted by Mr. William A. Welch, chief engineer of the Palisades Interstate Park Commission, who detailed an assistant to accompany and guide the engineer on the investigation throughout the extensive park area.

The Palisades Interstate Park was created in 1900 by the States of New York and New Jersey for the purpose of preserving the Palisades of the Hudson. The park is controlled by an unpaid commission appointed by the Governors of the two States and supported by appropriations from the two States and by private contributions. There are 1,000 acres in New Jersey extending for 12 miles along the Hudson river, 550 acres in Blauvelt tract west of Nyack, 780 acres in the Hook mountain-Rockland lake section and 33,708 acres in the Bear mountain-Harriman section.

The park has been developed by a force operated under the supervision of the Commission and organized under separate departments, having a general manager. Roads have been built, paths and trails cleared, lakes formed. docks and beaches constructed, camp buildings, ice houses, pavilions, lunch rooms and restaurants erected and steamer and automobile transportation furnished.

At the time of the inspection the Commission had a large force of men engaged in the construction of roads, camps, etc., in the undeveloped section of the park lands mainly lying in the Bear mountain-Harriman section. Another large force was employed in directing the activities of the camps which are rented, annually to acceptable and responsible organizations. All camps have police protection, telephone service and medical attention. In addition permits for individual camps are issued upon application for camping at Alpine, N. J., Hook mountain, Bear mountain and Brooks lake.

As a matter of ease in presenting the various facts, in order to simplify this report, the investigation of the bathing beaches maintained by the Commission along the Hudson river in the State of New Jersey will be described in detail in a separate report and only the camps maintained by the Commission in the State of New York will be discussed here in detail.

The geological formation of the whole region of the Bear mountain-Harriman section consists of gneiss with many intrusions of lava. The Palisades, which extend for 30 miles along the west bank of the river as a cliff several hundred feet high are intrusions of lava forming sills which are underlain with sandstone and formerly were covered with sedimentary strata. With sub-strata of this character, fissures may occur and the source of any water supplies derived from springs and wells located in this region is indeterminate. The ground water flow tributary to the wells and springs may come from a long distance and be subject to pollution although they may apparently be satisfactorily located.

It is mainly for the above reasons that the water supplies derived from wells and springs at the various camps have been viewed with suspicion. Furthermore, with the very large summer population, consisting mainly of young boys and girls and numbering at times over 75,000 which roam promiscuously over the entire park area, any supply derived from a stream, pond or spring is subject to the accidental, incidental or chance pollution from such a population. The probability of carriers being present in such a large population is very great and for the above reasons it was thought advisable that an endeavor should be made to have each water supply serve as large a number of camps as possible in order that all of the smaller supplies may be abandoned.

Before reaching definite conclusions or making recommendations with regard to some of the camps it was thought desirable to have a conference with the park authorities in order to receive the benefit of a knowledge of any local conditions that would have a bearing upon the matter. Accordingly a conference was held on February 25, 1921, with the chief engineer of the Park Commission and the practical questions arising at the various camps discussed and definite plans and procedures decided upon with reference to the numerous questions arising with respect to the many improvements in the sanitary facilities and surroundings at the various camps and beaches existing or planned for the future throughout the park area. The detailed recommendations and proposed changes are embodied in the memoranda on the various camps and only a summary of the more important of the proposed improvements will be discussed here under the headings of water supply, sewage disposal and general sanitary conditions.

Water Supplies

At Bear mountain the present water supply is derived by pumping from a spring which is subject to pollution. It is proposed to develop a new supply in conjunction with the United States government reservation on Iona island by constructing an impounding reservoir on a small brook at a point below Doodletown and about one mile west of Iona island. The consumption required by the government at Iona island is said to be about 50,000 gallons per 24 hours while that at Bear mountain is at times over 500,000 gallons per 24 hours. The flow at this brook is said to be sufficient to supply this quantity for about 8 or 9 months during the year but that for the remainder of the year it is almost dry. The available storage of the proposed reservoir is to be 60,000,000 gallons which will provide an ample supply under the above conditions. A filter plant is to be installed and the filtered water is to be sterilized before being pumped to either Bear mountain or Iona island for consumption. It would be advisable to provide the filters and a chlorination plant in duplicate in order that a continuous supply of treated water be furnished at all times.

The sanitary conditions on the watershed should be carefully watched in order that no insanitary conditions may exist on the watershed and if necessary the park authorities should apply to this Department for the enactment of rules and regulations for the sanitary protection of the water supply. If these precautions are taken and the purification plant is properly designed and efficiently operated an ample supply of water of a satisfactory sanitary quality may be had at all times.

For the tent camps at Bear mountain a new water supply should be developed or the camp abandoned.

The spring at BM-17, used as a main source of supply, should be properly protected and the auxiliary spring should be abandoned.

The dug well at Brooks lake should be abandoned and the drilled well should be properly protected from pollution.

The Negro Fresh Air Camp building was in poor repair and the sanitary conditions surrounding the camp were very unsatisfactory. For these reasons it would appear advisable to abandon this camp.

At the caretaker's cottage in the Queensboro lake section the spring should be protected from pollution. At the Y. W. C. A. camp the spring supply should be retained and the well supply abandoned. No water from Queensboro brook should be pumped for use unless first receiving treatment through a properly operated filter plant.

The spring for the Camp No. C-4, located on the northwesterly side of Lake Tiorati should be properly protected in accordance with the various recommendations embodied in the accompanying memoranda. The same is true for the spring at Camp No. C-2. These spring supplies may be retained since they can be properly protected from pollution and also since no other camps are planned to be erected on this side of the lake. On the southerly and southeasterly shore of the lake, however, it is planned to erect camps during the coming summer to accommodate some 1,000 campers and eventually it is expected that 2,000 to 2,500 campers will be accommodated here. For a water supply it is planned to filter and chlorinate the lake water having an intake placed in about 30 feet of water at the northerly end of the lake and away from the camps. It is believed that if the purification plant is properly designed and efficiently operated that this will give an ample and satisfactory sanitary supply of water. In this connection the units of the purification plant should be installed in duplicate in order that there may be no interruption in the operation due to a breakdown.

For the camps at Lake Kanawauke the spring pond supply should be used exclusively and the various wells and springs abandoned, except that during the winter season when the spring pond supply is not available, certain of the wells may be used if properly protected from pollution, as pointed out in the memoranda on the various camps. The spring pond supply should be protected from pollution in accordance with the various recommendations embodied in the memorandum on Camp No. K-1, and treated by a properly designed and efficiently operated filter and chlorination plant. In this connection it would be advisable to install all the units of the purification plant in duplicate to guard against any interruption in treatment of the supply due to a breakdown.

At Lake Stahahe the spring at Camp No. 6 should be abandoned. The Green pond supply should be protected by fencing the watershed of the pond as well as the side of the mountain above the distributing reservoir to the outlet of the supply pipe and subjected to treatment by a properly operated filter plant which should be provided in duplicate units.

At Twin lakes the use of Lower Twin lake water for washing purposes should be discontinued and the spring pond supply used for all purposes. The spring pond supply only should be used at the camps on both Upper and Lower Twin lakes and should be sterilized by means of liquid chlorine. For this purpose duplicate apparatus should be installed to guard against any interruption in the service. The house and chicken yard located near the pond should be removed. A tight fence provided with a locked gate should be erected at a sufficient distance from the edge of the pond to insure against pollution of the supply from any of the campers and drainage ditches should be dug to prevent the entrance of surface water. The well at Lower Twin lake No. 4 and the spring at Upper Twin lake No. 7 should be abandoned.

For the proposed Cohasset lake camps a supply may be developed by impounding the waters of Sure Bridge pond brook and forming a reservoir at a point above and to the south of the lake site. This reservoir should be protected from pollution by fencing the area around the reservoir and constructing drainage ditches. The supply should also be subjected to purification through a properly designed and operated filter plant, for which the units should be furnished in duplicate.

At Summit lake it is proposed to abandon the present camp and construct another camp on the lake for which a well supply is to be developed. As pointed out in the memoranda on this camp this supply will, if properly protected, furnish a water of satisfactory sanitary quality. Until the present camp is abandoned, however, the recommendations embodied in the report should be carried out.

For the Rockland lake camp the well should be properly protected as outlined in the memorandum on this camp.

At Hook mountain beach another source of water supply should be developed and the present well supply abandoned. For this purpose it is suggested that the Nyack public water supply be furnished by extending a pipe line to the beach.

At Blauvelt the sanitary surroundings of the well used to supply the caretaker's house should be carefully watched and the use of the Spring Valley Water company supply continued for the main supply.

At Hazard, Englewood, Bloomers and Alpine beaches the use of the springs and wells should be discontinued and the Hackensack Water company supply used by running a water pipe line to convenient points along the beaches from the main which is located on the top of the cliff and parallel with the beaches.

At Forest View the well at the tent camps should be abandoned and the spring protected. The other springs should also be properly protected from pollution in accordance with the recommendations embodied in the memoranda.

Sewage Disposal

The matter of sewage disposal appeared to be satisfactorily cared for by the park authorities, who have an organization formed for the purpose of looking after the toilets at the various camps and beaches. The modified Kaustine toilets, constructed by the park authorities, appeared to be operating satisfactorily. It would appear desirable, however, to provide a deflector in the toilets provided for the men, in order to deflect the urine into the toilet and prevent the wetting of the side and floor in front of the toilet seat. From the testimony of the authorities in charge of the camps and from the observations made at the time of the inspection of the various camps, it would appear that the odor of the chemical used, which is mainly sodium hydroxide, tends to drive the flies away. Very few, if any, flies were observed at any of the Kaustine toilets.

The data covering the operation of the Kaustine toilets for the season 1920, as furnished by the park commission, show that the quantity of chemical used varied from .042 to .068 pounds of Kaustine per camper per day and that the material removed amounted to approximately 10 gallons per pound of Kaustine used. It appears that the most important element is the proper charging and frequent cleaning of the vaults or containers.

There were several instances in which privies were found in an insanitary condition at the time of the inspection. These conditions have been covered in the memoranda and recommendations made for improvement.

With respect to capacity there were several places where the capacity appeared insufficient and others where the capacity was questionable. These have been pointed out in the memoranda and in the latter cases it has been recommended that the authorities make careful observations of the conditions of operation and if occasion warrants increase the capacity. Several instances were observed and noted in the memoranda on the various camps in which the toilet wastes were being disposed of in an unsatisfactory manner and in some instances, it has been recommended that the toilet be moved and the pit used for receiving the toilet wastes be cleaned, the sides and bottom sterilized with lime and filled with earth. Too great care cannot be taken in disposing of the toilet wastes in order that they may cause no nuisance or pollute any water supply.

General Sanitary Conditions

The general sanitary conditions of the grounds surrounding the various camps and beaches as well as the park property in general were found to be satisfactory with the exception of a very few camps. In each case it has been recommended that the garbage and refuse be collected daily and burned in order that no insanitary conditions may arise on the grounds surrounding the camps or beaches.

In conclusion it was recommended that copies of this report, together with the memoranda on the sanitary conditions of the various camps, be sent to the Palisades Park Commission and that the recommendations embodied in the report and the memoranda be carried out at an early date.

A reinspection was made of the sanitary conditions at the bathing beaches maintained by the Palisades Interstate Park Commission on the west shore of the Hudson river opposite New York City and Yonkers, with special reference to the matter of water supply and sewage disposal at these beaches.

This inspection was made on August 31, 1920, at the request of the Public Health Council by Mr. Earl Devendorf, assistant engineer of this Department in company with Mr. H. V. Dickenson, resident engineer of the Palisades Park Commission.

Previous inspections were made in 1918 and 1919 and the reports thereon may be found in the Annual Reports of the State Department for the respective years.

The general conditions of the beaches are practically the same as outlined in the former report and these features will not be reported at this time.

Hazard Beach

Hazard Beach is situated at the foot of the Palisades at Fort Lee, N. J., nearly opposite Fort Washington, New York City. It is reached from New York City by ferry from 158th street and by private launches and canoes and from various points in New Jerey by automobiles and trolley to Fort Lee. It is estimated that the population at the beach during the summer open season from July 1st to September 1st ranges from 5,000 to 15,000 persons on Sundays, holidays and week ends. On other days the population varies greatly from a few hundred to the maximum stated above. The general conditions remain practically the same as stated in the former report. with the exception that the Commission is filling in the land north of the beach along the river to form a playground.

A building containing a bath house, equipped with shower baths and toilet facilities, and a pavilion is still in practically the same condition as at the time of the previous inspection. For the men there are 13 Kaustine chemical closets and 5 five feet urinals and 9 lavoratories. For the women there are 22 Kaustine chemical closets and 10 lavoratories. The contents of the iron Kaustine tanks are pumped out about once every 2 weeks and carted away to a point about one-half mile above the beach where the ground is being filled in as a proposed playground. It was stated that the material is covered immediately and that no insanitary conditions have arisen. In addition there were at the time two old wooden privies located along the beach north of the pavilion. These were in poor sanitary condition having no screens provided and no covers for the seats. These privies should be removed and either sanitary privies with removable containers and properly protected against flies should be installed or some other suitable provision should be made to replace these privies in accordance with the previous recommendations.

The water supply for drinking and shower baths at this beach is furnished largely by the Hackensack water supply. The water for drinking purposes is piped to the well, the conditions surrounding which remain practically as those described in the previous report, with the exception that the gate has been moved to a point at the entrance of the tunnel in order to prevent unauthorized persons from entering the tunnel and causing any possible pollution of the water. It was stated that the Hackensack water is used for about six weeks' period during the summer and only on days when the attendance is very large and the spring flow is not sufficient to furnish the required amount of water. This well, as stated previously was originally excavated and blasted out of solid rock consisting of red and grey sand stone to a depth of about 400 feet below the ground surface. It would appear that this well might at times be subject to pollution from the populated district lying west of the river in as much as the sub-strata is entirely rock and may be fissured. It would, therefore, appear advisable to discontinue the use of this well and take the supply for drinking purposes entirely from the Hackensack water supply.

The drilled well formerly used for drinking purposes and located some 1,100 feet north of the boat landing has been abandoned and the pump removed.

At the time of the inspection a sample of water was collected from the pump at the spring at Hazard Beach and sent to the Division of Laboratories and Research for analyses, the results of which are given in the appended table.

The results of these analyses show a water having rather high nitrates and chlorine contents. The results of the bacteriological examination show a very high total bacterial count with the presence of organisms of the B. coli type in inoculations as small as one-tenth cc., indicating the presence of active contamination at the time of the inspection.

Bloomer Beach

The bathing beach at this point is situated one-half mile north of the Englewood end of the Dykeman Street ferry. The beach is reached from New York City by this ferry and by the river in private boats. It is estimated that on Sundays, holidays and week ends the maximum attendance reaches as high as 20,000.

There are 2 two-story pavilions used as shelters and gathering places at this beach. These pavilions are of rustic construction and are located approximately one-half mile apart. In addition there are two small bath houses which are constructed at this beach, one for the use of the men and the other for the use of the women. At the time of the inspection the sanitary conditions of these buildings appeared to be satisfactory.

In the southerly pavilion there are 2 toilet rooms; 1 for women, which is equipped with 3 flush closets and 3 lavoratories, and 1 for men, which is equipped with 2 flush closets, 2 wash basins and one 6-foot urinal. The sewage from these toilet fixtures is discharged into the Hudson river opposite the pavilion about one-half mile south of the bathing beach. It was recommended in a previous report that this discharge of sewage in the proximity of the bathing beach, which may at high tide be carried to the bathers, should be discontinued and the sewage disposed of in some other suitable manner.

At the northerly pavilion two 8-hole Kaustine toilets have been erected in place of the two wooden privies which were formerly used. The wastes

from these toilets are removed at frequent intervals and deposited ir
cesspool nearby. It would appear that at times of maximum attendance
toilet facilities at this beach are apt to be overtaxed. A careful stu
should be made by the authorities in charge of the park in order to det
mine if this condition really exists and if so to provide additional to
facilities.

Near the Englewood ferry there is a spring located approximately
feet back from the river and at the foot of a steep slope. The flow fr
this spring is led through a 1½-inch overflow pipe. The spring is not
situated with regard to the sanitary surroundings in view of the la
number of bathers having access to the vicinity of the spring, and
in view of the fact that the substrata is composed largely of rock wh
may be fissured and allow pollution to enter the ground water sup
from which the spring is derived at a very great distance. It would app
advisable, therefore, to abandon the use of this spring as a source of dri
ing water supply.

Another spring known as the South Spring at Bloomer Beach cons
of a small concrete basin provided with a pump located 15 feet below
away from the basin for drawing the water. The area surrounding
spring, however, has not been fenced and is open to the bathers, who n
possibly cause pollution of the ground within the vicinity of the spri
The spring furthermore is located at a distance of only 100 feet from
of the Kaustine toilets and pits provided for disposal of the toilet was
This may also constitute a source of pollution for the spring supply.

The North Spring at Bloomer Beach which was used as a source of dr
ing water supply by the bathers is located about 1,000 feet above the no
erly pavilion and some 15 feet away from the river. The spring has b
developed by the construction of a concrete covered box provided with a p
to which is connected the pump for drawing water from the spring. T
pump is located at the edge of the river some 15 feet away from the spr
basin. The water surface of the river at high tide is approximately 3
below the ground elevation. The spring basin is covered with about 1 f
of earth. The area surrounding the basin has not been fenced to prev
bathers from coming in the vicinity of the spring, which may give rise
opportunities of pollution of the supply.

Another source of drinking water supply at this beach is the spring kn
as the Powder House Spring. This spring, located north of Bloomer Be
is provided with a wooden curb and cover on which the pump is loca
directly over the spring. The spring is said to be 8 feet in depth.
fact that the cover is of wood may give rise to some pollution from the wa
water flowing into the spring. It would appear advisable therefore to ab
don the use of these springs as sources of drinking water supplies and
use the Hackensack Water Company supply by tapping the company m
located at the top of the cliff above the beach.

At the time of the inspection samples of water were collected from
various springs and sent to the Division of Laboratories and Research
analyses.

The results of the analysis of a sample collected from the Englew
spring show a high chlorine and nitrate content. The results of the bact
logical examination show a very high total bacterial count and the pres
of organisms of the B. coli type in inoculations as small as one-tenth
indicating the presence of active contamination at the time of the inspect

The results of the analysis of the sample collected from the South sp
at Bloomer Beach show a moderate nitrate content with a high chlor
The results of the bacteriological examination show a high total bacte
count and the presence of organisms of the B. coli type in all of the inoc
tions examined, indicating the presence of active contamination at the t
of the inspection.

The results of the examination of the sample collected from the No
Spring at Bloomers Beach show a moderately hard water having no c
and only a slight turbidity. The figures for nitrogen in its various fo
are moderate and the oxygen consumed content is also low. The figures

chlorine, however, are rather high. The results of the bacteriological examination show a high total bacterial count and presence of organisms of the B. coli type in all of the 10 cc. and 1 cc. inoculations examined, indicating that the supply was receiving some active contamination at the time of the inspection.

The results of the analysis of the sample collected from the Powder House spring show a high chlorine and nitrate content. The results of the bacteriological examination show a high total bacterial count with the presence of organisms of the B. coli type in all of the inoculations examined, indicating that the supply was actively contaminated at the time of the inspection.

Alpine Beach

This bathing beach is situated at Alpine, N. J., opposite Yonkers, and is reached by means of a ferry. The maximum population visiting this bathing beach on Sundays, holidays and week ends is estimated as varying from 250 to 1,500 persons per day. At this beach there are two small bath houses, 1 for men and 1 for women. There are three 2-hole Kaustine toilets, 2 of which are provided with 5-foot urinals. These toilets are pumped out every 2 weeks and the wastes disposed of by burial on a hill located about ¼ of a mile below the beach. It is said that the wastes are covered over with earth immediately and no insanitary conditions have arisen due to this practice. Care should be taken, however, to carefully observe the conditions of this dump in order to prevent the occurrence of any insanitary conditions that might arise from the material not being properly covered or disposed of.

As pointed out above in the discussion on the capacity of the toilets at Bloomers Beach, it would appear that the capacity of the toilets at Alpine Beach are deficient at times of maximum attendance. The authorities in charge of the beach, however, should make careful observations to ascertain if this condition exists and, if so, to remedy same by increasing the number of toilets at this beach.

At this beach a spring supply is used as a source of drinking water, the spring being located on the side of a steep slope just below the roadway paralleling the river. The spring is apparently covered over. The ground surrounding the spring is very steep and the spring is said to come from sandstone underlying trap rock. The water from the spring flows to a wooden tank located below the spring which is 8 feet in diameter and 6 feet in height and has a capacity of approximately 2,250 gallons. It would appear that this spring is open to pollution from possible surface wash from the roadway and the land above the roadway over which the bathers have free access. Furthermore, the area surrounding the spring had not been fenced to prevent the bathers from coming in the vicinity of the spring, thus possibly causing pollution of the ground around the spring.

Another source of supply at this beach comes from a spring located about ⅛ of a mile above the beach. The spring has been developed by constructing a basin 10 x 12 feet in cross-connection and 8 feet in depth. The pump house has been constructed adjacent to this spring and is equipped with a 3-horsepower gasoline and plunger pump. The spring itself is located approximately 75 feet from and 25 feet above the river. No fence has been erected around the spring to prevent bathers from coming in the vicinity of the spring. The water is pumped to a 15,000 gallon covered concrete reservoir located on the slope, from which the water flows by gravity to the 4 taps located on the beach. It is said that they use approximately 6,000 to 8,000 gallons of water per week. The reservoir is located some 300 feet from and 100 feet above the river.

At the time of the inspection samples of water were collected from the 2 springs and sent to the Division of Laboratories and Research for analyses.

In view of the unfavorable conditions surrounding one of these springs and the availability of the Hackensack Water Company supply from a main located on the top of the cliff above the beach it would appear advisable to carry this supply to the beach to be used exclusively for drinking purposes.

The results of the analysis of the Alpine Beach spring show a moderately hard water having very slight color and no turbidity. The figures for nitrogen in its various forms are moderate, with the exception of the nitrate content which is very high, as is also the oxygen consumed content. The figure for chlorine is also rather high. The results of the bacteriological examination show a very high total bacterial count with the presence of organisms of the B. coli type in the majority of the 10 cc. and some of the 1 cc. inoculations examined, indicating the presence of some active contamination at the time of the inspection.

The results of the analysis of the sample of water collected from the Alpine Beach spring, located ¼ of a mile above the dock, show a high total bacterial count and the absence of organisms of the B. coli type in all of the inoculations examined, indicating the absence of any active contamination.

Forest View Beach

This bathing beach is situated along the western bank of the Hudson river and about 1 mile south of and opposite to Hastings. This beach is mainly reached by boats from the river and the maximum attendance is said to be about 2,500 on Sundays, week ends and holidays during the season. A dock has been constructed along the river and a large pavilion constructed for the use of the bathers. The shores of the beach were free from rubbish and were in a general sanitary condition. All the garbage, paper and refuse deposited on the shores by visitors, not only at this beach but at all the other beaches, are collected and burned daily by the park employees.

At this camp there are two 6-hole wooden dug vault privies provided for the use of the bathers. These privies are located near the springs used as a source of public drinking water supply and may, under changing hydrostatic conditions of the ground water flow, cause pollution of the drinking water supply and, furthermore, are not very satisfactory for use under the conditions existing at the beach. New toilets of a more sanitary type should be constructed with either a removable container or other satisfactory means of disposing of the wastes and so located that the drinking water supply may not be polluted. Care should be taken, furthermore, by the authorities in charge of the camp to observe the operating conditions of the toilets in order to determine the number of toilets to be provided, for if sufficient toilet facilities are not provided insanitary conditions may arise at times of maximum attendance.

At a point about ½ mile below Forest View there are 175 to 225 tents located on the slope above the river. The average population of these tents, which are used by week end parties, is approximately 500. There are 2 dug vault privies provided for the use of these campers. One is a 2-hole and the other a 4-hole privy. These privies are said to be cleaned each week and the excreta covered with earth each day. Both privies are situated 75 feet from and 20 feet above the spring supply. It is said that these 2 privies are to be replaced by a 4-hole and an 8-hole concrete Kaustine toilet. The pits should be cleaned, the sides and bottoms sterilised with chloride of lime and filled with earth. Care should be taken in the removal of the toilet wastes in order that the water supply may not be polluted. The spring from which the drinking water supply at these tent camps is derived is located about 6 feet above the camps and is covered with concrete. Care should be taken to fence an area surrounding the springs in order to prevent the campers from causing any possible pollution of the supply.

The drinking water supply at Forest View is derived principally from a dug well provided with a loose stone wall 10 feet square and covered with a wooden cover. The pump is located some 30 feet away from the well for drawing the water. The ground surrounding the well is not fenced to prevent the campers or bathers from coming in the vicinity of the well and causing any possible pollution. The well is located approximately 20 feet from and at a slightly higher elevation than the river. The land to the west of the well rises very abruptly. There is another spring used as a source of drinking water supply and located approximately 200 feet north of the above well. This spring is also constructed in a similar manner to the above-described spring and is provided with a pump. Both of these spring supplies may be open to possible pollution from surface water entering the stone wall as well as from the privy which is located midway between the 2 springs and at approximately the same elevation. At a distance of about half way between Forest View bathing beach and the tent camps located to the south there is a well located in rock 15 feet deep in which the water was, at the time of the inspection, only 3 feet in depth. Water is pumped from this well by means of a pump located 10 feet from and above the well. This well, however, is open at the top and is subject to pollution from the campers who may come within the vicinity of the well. This well should be abandoned as a source of drinking water supply and the well covered up.

At the time of the inspection samples of water were collected and sent to the Division of Laboratories and Research for analyses. The results of the analysis of the sample collected from the spring at the tent camp opposite Greystone show a very high total bacterial count which may be in part due to the multiplication of water bacteria as the result of delay in transit since the samples were 4 days in reaching the laboratory. Organisms of the B. coli type were found in 1 of the 10 cc. inoculations examined, indicating the presence of a small amount of active contamination at the time of the inspection.

The results of the analysis of the sample collected from the North spring at Forest View Beach show a high total bacterial count with the presence of organisms of the B. coli type in all of the 10 cc. and some of the 1 cc. inoculations examined, indicating that the supply was receiving some active contamination at the time of the inspection.

The results of the analysis of a sample collected from the Middle spring at Forest View Beach show a moderately hard water having little color or turbidity. The figures for nitrogen in its various forms are moderate with the exception of the nitrate content which is a trifle high. The oxygen consumed content is moderate and the chlorine content is rather high. The results of the bacteriological examination show the presence of organisms of the B. coli type in all of the 10 cc. and 1 cc. inoculations examined, indicating that the supply was receiving some active contamination at the time of the inspection.

The results of the analysis of the sample collected from the well below Forest View show a moderately hard water having some color and little turbidity. The figures for nitrogen in the form of free ammonia is very high as is also those for nitrites. The chlorine is also high. The results of the bacteriological examination show a high total bacterial count with the presence of organisms of the B. coli type in inoculations as small as 1/10 cc., indicating that the supply was actively contaminated at the time of the inspection.

As a result of the above investigation the following conclusions were drawn in a report dated February 24, 1921:

Hazard Beach.

1. That at Hazard Beach the privies situated north of the beach have not been removed or replaced with a more suitable type of toilet in accordance with the recommendations of the former report.

2. That at Hazard Beach the gate in the tunnel leading to the well had been moved to the entrance of the tunnel in accordance with our previous recommendations.

3. That the driven well at Hazard Beach has been abandoned and the pump removed.

Bloomers Beach.

4. That the sewage from the toilets in the 2 pavilions at Bloomers Beach is still being discharged into the river and the recommendations of the former report for disposing of the sewage in some other way have not as yet been carried out.

5. That the privies at Bloomers Beach have been replaced with Kaustine toilets but at times of maximum attendance the sewage facilities are apparently still insufficient to accommodate the large number of bathers.

6. That the springs used as sources of drinking water supply at Bloomers Beach are all subject to opportunities for pollution and are not of a satisfactory sanitary quality.

Alpine Beach.

7. That the spring water supply derived from Alpine Beach was not of a satisfactory sanitary quality.

8. That the drinking water supply derived from the spring located ⅛ of a mile north of Alpine Beach was of a satisfactory sanitary quality although the spring was at the time of the inspection open to opportunity for contamination from the large number of bathers having free access to the vicinity of the spring.

9. That the toilet facilities at this beach are apparently inadequate to accommodate the number of bathers visiting this beach, especially on week ends, Sundays and holidays.

Forest View.

10. That the sewerage facilities are not of a satisfactory sanitary type and are apparently inadequate to accommodate the number of bathers visiting this beach on week ends and holidays.

11. That the North spring used as a source of drinking water supply at Forest View Beach is not properly protected from pollution.

12. That the Middle spring used as a source of drinking water supply at Forest View Beach is not properly protected from pollution.

13. That the well at the tent camps below Forest View Beach is open to opportunities for serious contamination.

14. That the spring at the camps at Greystone was apparently of a satisfactory sanitary quality.

The following recommendations were made:

Hazard Beach.

1. That the authorities in charge of the beach should, in accordance with our previous recommendations, take every precaution in disposing of the toilet wastes in order that no objectionable conditions may arise or that the wastes may not be washed into the river in such a manner as to cause pollution of the river water in which the people bathe.

2. That the privies north of the beach should be abandoned and other toilet facilities provided with a removable container or other satisfactory type.

3. That, in view of the possibility of pollution reaching the ground water flow tributary to the spring supply, this source of drinking water should be abandoned and only the water of the Hackensack Water Company used for this purpose.

4. That the driven well which has already been abandoned, in accordance with our previous recommendations, should not be used.

Bloomers Beach.

5. That, in accordance with the recommendations of the previous report, the sewage from the toilets in the two pavilions at Bloomer Beach should be disposed of by some other means than dumping into the Hudson river at a point liable to cause pollution of the water in which the bathers swim.

6. That the authorities in charge of the beach should make a careful study of the toilet facilities in order to determine the necessary additions to be made to the present facilities and add whatever toilet units are found to be necessary.

'hat, since the springs used as a source of drinking water supply
oomers Beach are all subject to opportunities for pollution and
an unsatisfactory sanitary quality, they should be abandoned
nother supply of satisfactory sanitary quality obtained such as
ackensack water supply, which is available through a pipe line
located on the cliff above the beach.

Beach.

'hat the Alpine Beach spring used as a source of drinking water
should be abandoned and another source of supply of satisfactory
ry quality obtained such as the Hackensack water supply, which
ilable through the existence of a pipe line on the top of the cliff,
f and above the beach.

'hat the authorities in charge of the beach should enclose the
round and continue careful supervision of the sanitary surround-
f the spring located ⅛ of a mile west of Alpine Beach in order
o insanitary conditions may arise to cause pollution of the drink-
ater supply from this spring.

That the authorities in charge of the beach should make a care-
udy of the toilet facilities with reference to the number of visitors
ek ends, Sundays and holidays, in order to determine the number
litional toilet units to install, and these facilities should be in-
l at as early a date as possible in order that, at these periods of
num attendance no insanitary conditions may arise due to the in-
ate toilet facilities.

View.

That the present privies at Forest View Beach should be aban-
the pits cleaned and the sides and bottom sterilized with chloride
e and filled with earth, in order that there may be no possibility of
ion of the drinking water supply from these sources.

That additional toilet facilities should be provided with remov-
ontainers, or of a more satisfactory sanitary type, and so located
cause no possible pollution of the drinking water sources.

That both the North and Middle springs used as drinking water
es should be protected by:

(a) Fencing an area around the springs.

(b) Construction of drainage ditches to divert surface wash in
ne vicinity of the springs.

(c) Repairing the stone walls of the spring basins to prevent
ollution of the supply by the entrance of surface wash.

That the authorities in charge of the beach should continue care-
pervision of the conditions surrounding the springs opposite Grey-
in order that no insanitary conditions may arise to cause pollution
supply.

That the well used as a source of drinking water supply at the
amps should be covered and abandoned as a source of drinking
supply.

That the authorities in charge of the benches should carefully
ise the operation of the toilets, in order that there might arise
anitary conditions due to improper operation or infrequent clean-
the toilets.

That in disposing of the toilet wastes the authorities should exer-
treme caution in order that these toilet wastes may not be depos-
t any point liable to cause pollution of the various drinking
supplies.

That the authorities in charge of the camp should continue the
t practice of daily collecting and disposing of all refuse, in order
no insanitary conditions may arise along the beaches from this

INVESTIGATION OF COUNTY FAIR GROUNDS

An investigation was made by the Engineering Division during 1920 of the sanitary condition of all county fair grounds in this State with special reference to water supply, sewerage and sewage disposal, garbage and refuse disposal, and the adequacy of the toilet facilities at these fairs. A number of fair grounds were visited while the fairs were in progress and the actual operating conditions were observed. The report upon the investigation follows.

The following report on the sanitary conditions at the county fairs of the State of New York was based on inspections of the grounds, made by Mr. Charles T. Male, sanitary inspector of this Department, between July 1 and September 30, 1920:

General

During these months all the fair grounds in the State, excepting that at Troupsburg, Steuben county, which was omitted on account of lack of time, were visited, and special studies made at 10 of the fairs while they were in progress. Particular attention was given in this investigation to the matter of water supply, sewage disposal and waste disposal.

According to the records of the Department of Farms and Markets there were, not including the State Fair at Syracuse, 81 agricultural fairs held in the State during the year 1920. Two societies which have previously held fairs, The Rensselaer County Agricultural and Horticultural Society and the Southern Steuben County Agricultural Society, did not hold fairs during 1920. The total attendance at the fairs is estimated at 1,800,000, the attendance at the individual fairs varying from 1,500 at New City, Rockland county, to 140,000 at Rochester, Monroe county. The fairs generally extend over a period of about four days during which the attendance is not equally divided, the number of persons visiting a fair on the day of maximum attendance being about 43 per cent of the total number visiting the fair during the days on which it is open. The attendance on the maximum days averaged about 9,500, varying from 500 to 25,000. It is this attendance, about 80 per cent of which is on the ground at the same time, that is of the greatest importance in a study of the sanitary conditions and requirements at the fairs.

Attendance

The figures for the attendance at the different fairs, together with certain information regarding water supplies and toilet facilities, is given in the appended tables Nos. I and II. In a few places it was not possible to secure reliable information on the attendance and the figures in these cases are therefore, necessarily omitted. Detailed observations of the attendance to determine the variation during the day, the ratio of the number of persons on the ground at one time to the total attendance for the day and the proportion of men, women and children were made at the fairs at Altamont, Oneonta and Nassau, the results of which are shown on the attached diagrams and in table No. III. A study of these diagrams and tables indicates that in general the attendance increases at a nearly uniform rate from the opening of the fairs in the morning until about 2:30 p. m., then at a less rapid rate until 3:30 p. m., at which time the number of persons on the grounds begins to decrease. Weather conditions and special attractions, of course, influence the rate and time at which persons arrive at the fair. The maximum number of persons on the ground at one time was found to be from 70 to 90 per cent of the total attendance for the day. Of the total attendance from 53 to 60 per cent, an average of 55.2 per cent were men. No attempt was made to obtain the percentage of children since for the purposes of this investigation it did not seem necessary. All children of such age that they would probably use the women's toilets were counted under women and children. A few observations made at one of the fairs indicated that about 8 or 10 per cent of the total attendance were children.

Water Supply

The water supplies for use at the fairs are generally obtained from the public supply of the nearby cities and villages, from wells on the fair grounds or from both sources. A study of table I indicates that 57 per cent of the fairs representing 70 per cent of the total attendance obtain their supply exclusively from public municipal supplies, 28 per cent of the fairs representing 20 per cent of the total attendance obtain their water exclusively from wells and that 14 per cent of the fairs representing 10 per cent of the attendance use both the public and municipal supplies and wells. The quality of the water obtained from the public supplies from the nearby cities and villages, is usually of safe quality for human consumption. The method of distributing the water is, however, in many cases, not entirely satisfactory. The water is generally piped to hydrants conveniently located about the grounds varying from 2 to 50 in number at each fair. The ratio of the number of hydrants to the number of persons visiting the fair on the day of maximum attendance varies from 1 hydrant to 160 persons to 1 hydrant to 10,000 persons, and averages about 1 hydrant to each 1,200 persons, the average being greater at the smaller fairs than at the larger ones. The ratio at fairs having an attendance of under 5,000 people, varies from 1 to 150 to 1 to 2,500 averaging about 700 persons per tap, and at those having an attendance of over 5,000 people from 1 to 250 to 1 to 10,000, about 1,400 persons per tap. The difference is apparently due largely to the necessity of securing satisfactory distribution for small fairs. Very few fairs are equipped with sanitary drinking fountains and at fewer still are individual paper cups provided. At Avon, Cortland, Cuba, Middletown, Mineola, Perry, Rochester and Watertown and a few other places, some sanitary drinking fountains are provided varying in number from 1 to 6, and at Binghamton and Batavia, paper cups are provided. At most of the fairs, however, the common drinking cup is used or the people use such vessels that they may have handy, and at some places water is obtained by dipping from large vessels. The use of the common drinking cup at public fairs needs little comment. It has for many years been considered a menace to the public health and its use in public places is prohibited by Regulation 3 of Chapter VII of the Sanitary Code. The practice of dipping water from large unprotected vessels and of carrying water from the taps to the places where it is to be used for drinking in open vessels, is an unsatisfactory procedure as it affords opportunity for contamination. It would seem desirable that all fairs should be provided with sanitary drinking fountains of a satisfactory type conveniently located or that paper cups should be provided at all the taps accessible to the public. In either case the use of common drinking cups should not be permitted. The number of drinking fountains or taps of drinking water that should be provided, of course, varies with the attendance. Observations made at the fairs seemed to indicate that at least 1 sanitary drinking fountain or tap supplied with paper cups should be provided for each 500 persons visiting the fair on a day of maximum attendance except that in order to secure proper distribution every fair should have at least eight fountains or taps provided with cups. Precautions should be taken to locate the fountains or taps at convenient points so as to reduce the probability of water being taken for drinking purposes from unsatisfactory sources. This is particularly true in cases where taps are provided for watering stock, for it is found that those handling and inspecting the animals are apt to take water from those taps in any vessel that may be convenient. Part of the fountains should be so arranged that they may be reached by children.

At those fairs where water from city or village supplies is not available the drinking water is generally obtained from dug wells, drilled wells and in a few cases from springs. The number of wells provided varies from 1 to 8 and averages about 2½ per fair or 1 for each 3,000 persons visiting the fair on the day of maximum attendance. These sources are in a few cases satisfactorily protected from pollution but in many cases very little attention has apparently been given to the location or protection of the wells. In most cases the wells are shallow, either dug or driven and equipped with pitcher or suction pumps. Little precaution has generally been taken to prevent the entrance of the waste water from the pumps or surface wash which with large numbers of persons passing and repassing over the ground nearby will undoubtedly carry considerable pollution. Many of the wells are located close to privies and stables from which pollution undoubtedly reaches them. At Batavia, Ballston Spa., Hamburg and a few other places, those in charge of the fairs have developed the wells or other sources of supply so as to form private water systems from which water is distributed to hydrants the same as the water from the municipal sources is distributed. This procedure is generally to be recommended and should be carefully considered at all fairs, for it allows of a better protection of the supply than when the wells are used directly and necessarily located in places where large numbers of persons congregate. Where funds are not available for the installation of a general system it will probably be possible to develop and protect a well and pump the water from it by means of a hand pump, wind mill or gasoline engine to a small elevated tank from which it may be distributed to hydrants. In all such cases the sources should be carefully protected from pollution and the water distributed with the same precautions as are used for municipal supplies.

Where it is impossible to secure water from a public supply or to develop, at present, a private system as suggested, the conditions can in most cases, be materially improved at small expense. If dug, the walls of the wells should be made watertight to a depth of at least 8 feet to prevent the entrance of water from the upper strata which is generally subject to pollution. The ground around the wells for a distance of 10 or 20 feet should be graded to drain away from the wells and concrete platforms fitted with tight covers and sloped from the wells and extending 4 to 8 feet on all sides should be provided to prevent the entrance of foreign material. A tight fence should enclose an area at least 20 feet in diameter around each well to prevent trespassing and the consequent pollution of the soil, and the pumps should be located outside of these enclosures. Troughs or drains should also be provided to receive waste water from the pumps and conduct it to a considerable distance from the wells. If driven or deep wells are used it will, of course, in most cases be necessary to locate the pumps over the wells. In such cases the casings should be absolutely tight, the ground around the wells for a distance of 10 or 20 feet should be graded to drain away from the wells, watertight concrete platforms sloped from the wells and extending 4 to 8 feet on all sides should be provided to prevent water spilled near the wells from seeping into the ground near them, and troughs or drains should be arranged to receive waste water and conduct it to a considerable distance from the wells.

The distance by which wells and privies should be separated depends, of course, somewhat on the nature of the soil. A coarse gravel and rock or clay with crevices or openings will permit the passage of pollution for a considerable distance, while a fine sand will generally render polluting matter inert in a relatively short distance. No wells should be located within 300 feet of a privy or stable if the water is to be used for drinking or culinary purposes and precautions should also be taken to see that the drainage from the vicinity of the privies and stables does not flow toward the wells. It will, of course, generally be considered necessary to locate one or more wells near the stables for watering the stock. When this is done every precaution should be taken to prevent water from these wells being used for drinking purposes. This can be accomplished by arranging the pumps so that the spouts discharge under water in the troughs or in some other manner so that it will be inconvenient or impossible to obtain water from them for drinking.

Where both village supplies and well water are used at present the wells should be abandoned for drinking and culinary purposes and arrangements made for the satisfactory distribution of the village water.

Toilet Facilities

The toilet facilities at the fairs vary considerably in both type and condition. Of the 81 fairs, 5 fairs, or 6 per cent of the total number, are equipped with flush closets only. The attendance at these fairs is about 10 per cent of the total attendance. Thirteen of the fairs, or 17 per cent of the total number, are provided with both flush closets and privies. At 63 of the fairs, or 77 per cent of the total number, however, privies only are provided. Less than half the toilets were in satisfactory sanitary condition. The number of fixtures provided at each fair is given in the appended Table No. 11. From a study of this table it appears that the number of facilities varies from less than 1 seat per 1,000 attendance at Watkins to 1 seat for every 53 persons attending the fair on the day of maximum attendance at Plattsburg. The figures for all the fairs, regardless of whether equipped with flush closets or privies, indicate that on the average, 1 seat is provided for about every 250 persons visiting the fairs on the days of maximum attendance. These facilities are provided as follows: One seat for men for every 555 attendance, or 1.8 seats per 1,000 attendance; 1 urinal (considering 2 feet of urinal trough as one urinal) for every 950 men, or 1.05 urinals per 1,000 attendance, and 1 seat for women for every 435 attendance, or 2.3 seats per 1,000 attendance. On the basis of the number of men and women on the ground at one time at the fairs this is 1 seat per 250 men, or 4 seats per 1,000 men; 1 urinal per 410 men, or 2.4 per 1,000 men, and 1 seat per 160 women, or 6.3 seats per 1,000 women.

Special studies were made at Altamont, Oneonta, Nassau and Hamburg to determine the number of toilets that are necessary for a given attendance. Curves showing the rate of use at these toilets at the fairs on certain days are plotted on the attendance curve sheets attached and the results have been briefly summarized in Table No. IV. It is immediately apparent on examining the data that the rate of use of the toilets is not directly proportional to the number of persons on the grounds but is governed largely by the attractions at the fairs, the people apparently visiting the toilets between events of interest. It is also apparent that while the use of the toilets increases as the attendance increases, it does not follow the increase to its highest point, the rate of use of the toilets being no greater during the two or three hours while the crowd is largest than when only about 75 per cent is on the grounds. This is probably due to the fact that there are more interesting events for the period of maximum attendance and also to the fact that those who visit the fairs for only a short period in the afternoon do not use the toilets. The maximum rate of use of the toilets observed, excepting at Hamburg which will be considered later, was 41 men and 74 women and children per hour for every 1,000 persons attending the fair on that day. The average maximum rate at Altamont, Oneonta and Nassau for every 1,000 persons attending the fair was 40 men per hour and 66 women and children per hour. The average maximum rate for one full hour, however, was a little less than this, being about 25 men per hour and 51 women and children per hour. The fact that these figures show that the women and children use the toilets more than twice as frequently as men at most fairs is a matter which requires some attention. The figures are difficult to explain unless, as seems probable, the men avoid using the toilets if any other convenient place is available. This fact is important for, with the improvement in the sanitary condition of the toilets and their location at more convenient points, it is probable that the rate of use for the men would increase. A study of the conditions at Hamburg, where new and sanitary flush toilets have recently been provided and where, during the period of observation, the rain kept the people under shelter to a large extent, seemed to support this conclusion, for it was found that even allowing for the fact that there was a greater proportion of men on the grounds than usual, the men used the toilets more frequently than women.

The number of persons that one toilet seat will accommodate per hour is dependent to some extent upon the arrangement of the seats and compartments, the convenience of ingress and egress and the condition of the toilets. In general, however, it was found that on the average one seat would accommodate about 25 women per hour. With the maximum rate of use of the toilets of 74 women per hour per 1,000 total attendance this would require the provision of approximately 3 seats per 1,000 attendance, a number somewhat greater than the average of 2.3 now provided at the fairs, but lower than the number provided at 11 or 13 per cent of the fairs. Considering the fact that when the condition of the toilets is improved as it should be, the rate of use will probably increase considerably and that the distribution of the toilets will make it impossible for them all to be used at the maximum rate at the same time, and it would seem that at least 4 seats should be provided for women for each 1,000 persons attending the fairs on the day of maximum attendance.

The determination of the number of fixtures which should be provided for the men is a more complex problem. Observations indicate that on the average one seat will accommodate about 15 men per hour and one urinal about 40 men per hour, and that about 15 or 20 out of every 100 men visiting the toilets use the seats and the remainder the urinals. Figuring from this basis and the fact that a maximum of 41 men use the toilets per hour at the fairs, excepting Hamburg, where observations were made, it would seem necessary to provide only about 0.53 of a seat and 0.80 of urinal for each 1,000 persons visiting the fair on the day of maximum attendance. As noted previously, the observations at Hamburg indicate that under certain conditions the use of the toilets by the men may be more than doubled while the use by women is only slightly affected. The maximum rate of use by the men at Hamburg was 111 per hour per 1,000 attendance, or 195 per cent greater than at any other fair, while that for women and children was 76 or only 2.7 per cent greater than the maximum figure for the other fairs. Using this figure which will probably be more nearly correct, when toilets of a satisfactory type are provided and maintained in proper condition, it would seem necessary to provide about 1.5 seat and 2.2 urinal per 1,000 persons attending the fair on the day of maximum attendance.

Another factor not previously discussed which affects the use of the men's toilets more than the women's must also be considered before determining the number of toilets needed. The crowds move with the attractions from one part of the grounds to another. It was often found that, for example, while races were being held the toilets near the tracks were used to capacity while those in other parts of the grounds were practically empty, the reverse being true when no racing or track events were going on. It is at once apparent, therefore, that the number of men's toilets, if they are distributed about the grounds at convenient points, as they should be, to prevent the commission of nuisance and the pollution of the ground, must provide a greater number of fixtures than that just mentioned. The necessary increase is difficult to figure accurately but from such observations as could be made it seemed advisable that 2 seats and 3 urinals should be provided for each 1,000 attendance at the fairs on the day of maximum attendance, figures slightly different from 1.8 and 1.05 the average now at the fairs, but in accordance with the generally observed condition that the ratio of urinals to seats was not great enough at most of the fairs.

At the smaller fairs it is probable that more toilet fixtures will be required for both men and women than the above figures indicate in order to secure satisfactory distribution. In no case should the number of fixtures be less than that required for 4,000 attendance according to the above figures.

The types of toilets used at the fairs depend to a large extent, on local conditions. Where conditions permit and funds are available it seems desirable that flush closets should be provided as has been done at Hamburg, Rochester, Malone, Ogdensburg and Walton and partially at Dunkirk, Plattsburg, Cortland, Westport, Batavia, Lowville, Cobleskill, Hornell and other places where the privies are being gradually replaced by flush closets. Such closets where provided should be of the standard siphon type provided with separate flushing tanks of at least 4 gallons capacity or suitable flush valves. The closets should be set at least 3 feet on centers. The urinals should be of corresponding type and should preferably be flushed automatically as experience shows that individual flushing cannot be relied upon. The floors should be of concrete or other impervious material and the lower 6 inches of the wall should be of similar material. The building should be of ample size and well lighted and ventilated. Experience seems to indicate that toilet rooms should contain about 250 cubic feet of air space per fixture and when compartments are used that they should be 3 feet wide and 4 feet or 4 feet 6 inches deep. There should be at least 2 square feet of window space per fixture and never less than 8 feet square. The doors and windows and ventilators should, of course, be screened and the screen doors so constructed as to stand rough usage. Double swing doors are usually most satisfactory. Toilet paper should be provided or difficulty will probably be experienced due to stoppage in the sewer lines.

The disposal of the sewage from the flush toilets is a problem which varies so with different conditions that it is difficult to make any suggestions that will cover all cases. Where city or village sewers can be reached the solution is, of course, simple, and where large streams or other bodies of water are available the sewage may in most cases be discharged into such water after proper treatment. Where grounds are located inland and away from streams more complete treatment will, of course, be required, the type of plant depending upon local conditions. In any case the plans for the disposal of the sewage should be prepared by a competent engineer and must, according to law, be approved by this Department.

While flush toilets are, without question, the most desirable form for use at fairs, it will undoubtedly be necessary for most fairs to continue the use of privies, provided either with earth vaults or with removable containers. The former type will probably be found best suited to the condition at the majority of the fairs and is the type now generally in use. It was found, however, that at most fairs little attention was apparently given to the construction or maintenance of the privy buildings. The buildings were found to be improperly located in many cases, the construction was in general not entirely satisfactory and few were maintained in sanitary condition. Practically none were completely screened and fly-tight, although many were located near places where food and drinks were sold. It would seem, therefore, that more attention should be given to these buildings.

Where earth vault privies are provided they should obviously be located so as to preclude the possibility of any drainage from them reaching any well. The vaults should be generally 4 or 5 feet deep and about 4 feet wide, the length, of course, depending on the number of seats. The sides of the excavation should be tight sheeted with well braced planks to prevent caving and provide means for making a tight fly-proof joint with the privy building. Well fitted doors may be provided, if desired, to afford access to the vaults for cleaning. The privy building itself should be tight boarded and provided with a well fitted self-closing door. The floor area should be at least 18 square feet for each seat and ventilation should be provided by openings having an area of not less than 1 square foot for each seat. The vault may be ventilated by a shaft from it extending above the roof. All ventilating openings should be covered with wire screens of not less than 14 meshes to the inch. Frequently sprinkling the contents of the vault with dry earth or lime will generally tend to reduce the odors. The contents of the vault should not be allowed to reach within 18 inches of the surface of the ground before the vault is cleaned and the contents removed and disposed of by burying in some remote place. Where the privies are small and sufficient area is available it is sometimes possible to move the building to another site and fill the old vault without cleaning it. Where this is done the vault should be deep and an ample covering of earth provided over the matter deposited in it.

Where privies provided with removable containers are used the same precaution regarding location, size, fly-tightness, screening and ventilation should be observed as in the case of the earth vault privy. The doors to the container compartments should fit well and the containers, preferably of metal, should be watertight. The containers should be changed and their contents disposed of in a sanitary manner before there is any danger of overflowing.

The urinals provided in connection with the privies are at present of several different types; in some cases they consist of a rail and a shallow ditch, in some the top board of the seats has been removed, in others wooden or metal troughs are provided which drain to privy vaults or to cesspools. It would seem desirable that wherever possible the urinal troughs should be of galvanized iron or preferably of enameled iron or, if slabs are used, of slate or other impervious material and drain to leaching cesspools of suitable size so located as not to endanger the water in any well. The walls back of the urinals should be waterproof and the floors under them for a distance of 3 feet from the wall should be of concrete or other impervious material and arranged to drain to the cesspool. The urinals should be flushed out frequently. The same precaution in regard to area, ventilation and screening should be observed as in the case of privies.

In general all toilets, whether flush closets or privies, should be located at convenient points and kept in sanitary condition so as to reduce the probability of the pollution of the ground, and of sufficient capacity to accommodate the number of persons apt to congregate in that part of the grounds. Where wells are used toilet buildings should be located as far as possible from them and precaution should always be taken to see that no food is handled or distributed within 100 or, preferably, a greater distance from any toilet.

Garbage and Rubbish Disposal

The disposal of the garbage and rubbish at the fairs does not generally present a very difficult problem and the fact that the fairs are open for only a few days makes it improbable that the accumulation of refuse will ordinarily cause a nuisance. It would seem advisable, however, that some provision should be made for caring for and disposing of the refuse. At some fairs it is collected in cans and removed and disposed of daily by burning, burying or other method, while at others no provision whatever is made for its collection or disposal. It would seem desirable that galvanized iron cans of suitable size, equipped with covers, be provided at the kitchens and other places where food is prepared or dispensed, to receive the wastes, and that similar cans be provided at suitable points about the grounds in which persons may deposit rubbish, and that these cans be collected and their contents disposed of daily in a sanitary manner, either by burning or burying.

Conclusions and Recommendations

Since the conditions at the different fairs vary widely it is impossible to make detailed recommendations for improvements that will apply to all or even most of them, and for this reason individual memorandums have been prepared, briefly outlining the condition at each fair and making suggestions for improving its sanitary condition. It seems, however, that certain general recommendations will apply to a greater or less extent to many fairs and we therefore recommend that those in charge of the different fairs give attention to the following insofar as they apply to the fairs in which they are interested.

In regard to water supplies:

1. Water for drinking and culinary purposes should, wherever possible, be taken from the mains of nearby municipalities.

2. Where water from a municipal supply is not available a private system from a well protected source should, if possible, be developed and piped to the different parts of the grounds.

3. Where it is necessary to use wells:

(a) All dug wells and all driven or drilled wells where possible, should be so arranged and developed that the pump will be at least 15 feet from the well, and the area around the well for a distance of not less than 10 feet on all sides enclosed with a tight fence and trespassing on the area prohibited.

(b) All wells should be located at least 300 feet from any stable or privy and, if possible, on higher ground.

(c) The walls or casings of all wells should be watertight for a distance of at least 8 feet below the surface of the ground.

(d) The ground around the wells for a distance of at least 10 feet in all directions should be graded to turn water away from them.

(e) A tight concrete platform sloped away from the well and extending at least 5 feet from it in every direction, should be provided over each well.

(f) Troughs and drains should be provided to receive waste water and conduct it to a considerable distance from the wells.

(g) If wells are located near stables for convenience in watering stock, the pumps should be arranged by having the spouts discharge under water in the troughs or other means to make it impossible to obtain water for drinking and every precaution be taken to prevent the water from these wells from being used for drinking or culinary purposes.

4. Where water is distributed through a system of pipes at least one sanitary drinking fountain or tap should be provided for each 500 persons visiting the fair on the day of maximum attendance. Such taps or fountains should be located at convenient points and some arranged so that they may be used by children. In no case should less than eight be provided.

5. The transportation of water in open vessels and the practice of dipping water from such vessels for drinking purposes should be prohibited.

6. Common drinking cups should not be provided and their use should be prohibited.

In regard to the toilet facilities and the disposal of the sewage:

7. Whenever possible toilets should be equipped with flush closets and urinals.

8. Where it is not possible to provide closets and urinals, well constructed privies and urinals of the type described in the body of this report for such conditions, should be provided.

9. Toilets should be located at convenient points so as to provide ample facilities for crowds that may collect in any part of the grounds, but should never be located within 300 feet of any well used as a source of water supply for drinking or culinary purposes or within 100 feet of any place where food is handled or dispensed.

10. All toilet buildings should be fly-proof and all openings, doors, windows and ventilators in such building should be properly screened with wire mesh with not fewer than 14 wires to an inch.

11. All toilets should be maintained in clean and sanitary condition.

12. Where flush toilets are provided:

(a) There should be not less than 250 cubic feet of space and at least 2 square feet of openable window area per fixture.

(b) The closets should be set at least 3 feet on centers and urinals not less than 2½ feet on centers.

(c) The floor and first six inches of the walls should be of concrete or other impervious material and the floors should be properly drained.

(d) An ample supply of toilet paper should be provided.

(e) The sewage from the toilets should be discharged into a public sewer or disposed of in a disposal plant designed by an experienced sanitary engineer and approved by the State Department of Health.

13. Where privies are provided:

(a) At least 25 square feet of floor space and not less than 1 square foot of ventilator opening should be provided per seat.

(b) If of the earth vault type, the contents of the vault should never be allowed to rise within 18 inches of the surface of the ground before the vault is cleaned or the privy moved and the vault filled.

(c) If of the container type, the containers should be replaced and the contents disposed of before there is danger of their overflowing.

(d) The contents of the vaults or containers should be disposed of by burying in some remote place.

(e) Urinals should be of galvanized iron, enameled iron or other impervious material arranged to drain to a cesspool.

(f) The wall back of the urinals should be of impervious material and the floor under the urinals for a width of 3 feet should be of concrete or other impervious material and drained to the same cesspool.

(g) Urinals should be flushed out and dry earth or lime be sprinkled into the vaults or containers at frequent intervals.

14. The number of fixtures provided should be as follows:

(a) Not less than 2 seats and 3 urinals for men for each 1,000 persons visiting the fair on the day of maximum attendance.

(b) Not less than 4 seats for women for each 1,000 persons visiting the fair on the day of maximum attendance.

(c) When urinal troughs are provided, not less than 2 feet of trough and preferably 2½ feet should be considered as one urinal.

(d) Not less than enough seats and urinals to allow of proper distribution about the grounds regardless of the attendance and in no case less than enough for 4,000 people.

15. For the purpose of collecting the garbage and refuse, galvanized iron cans, equipped with suitable covers, should be provided at all kitchens and places where food is handled and distributed and at convenient points about the grounds. These cans should be collected daily and the contents disposed of by burying or burning.

COUNTY FAIRS

NEW YORK STATE — WATER SUPPLY

Table No. I

COUNTY	Location	Days open	Attendance		Water supply		
			Total	Maximum	Wells, number	Public supply, taps	Persons per tap
Albany	Altamont	3	10,000	7,500	......	4	1,880
Allegany	Angelica	4	20,000	5,000	......	6	830
	Cuba	4	25,000	12,000	......	5	2,400
	Wellsville	4	4,000	1,500	6	......	250
Broome	Whitney Point	4	4,000	1,500	2	......	750
	Binghamton	4	60,000	25,000	6	......	4,170
Cattaraugus	Little Valley	5	30,000	12,000	......	6	2,000
Cayuga	Moravia	4	15,000	8,000	2	......	4,000
Chautauqua	Dunkirk	5	31,000	12,000	1	12	920
Chemung	Elmira	4	20,000	10,000	6	......	1,670
Chenango	Norwich	4	15,000	8,000	......	7	1,140
	Afton	4	15,000	7,000	1	5	1,160
Clinton	Plattsburg	6	9,000	3,000	......	8	370
Columbia	Chatham	4	30,000	12,000	......	4	3,000
Cortland	Cortland	5	50,000	25,000	3	3	4,160
Delaware	Delhi	4	10,000	5,000	......	2	2,500
	Walton	4	10,000	5,000	......	12	410
Dutchess	Rhinebeck	4	15,000	12,000	......	5	2,400
Erie	Hamburg	6	40,000	25,000	......	72	350
Essex	Westport	4	12,000	7,000	......	6	1,170
Franklin	Malone	4	40,000	20,000	......	25	800
Fulton	Johnstown*	......	....	....	......	......	....
Genesee	Batavia	5	56,000	20,000	3	28	650
Greene	Cairo	3	9,000	5,000	......	5	1,000
Herkimer	Herkimer	3	15,000	10,000	4	......	2,500
Jefferson	Watertown	4	30,000	15,000	1	13	1,150
	Cape Vincent	4	3,000	1,000	......	6	160
Lewis	Lowville	4	30,000	12,000	......	6	2,000
Livingston	Avon	4	17,000	7,000	......	16	440
	Hemlock	4	30,000	16,000	2	......	8,000
	Caledonia	4	12,000	4,000	......	10	400
Madison	Brookfield	4	5,000	2,500	2	......	1,250
	De Ruyter	4	7,000	4,000	2	......	2,000
Monroe	Brockport	4	28,000	12,000	......	6	2,000
	Rochester	6	140,000	25,000	......	?	?
Montgomery	Fonda	4	35,000	10,000	......	4	2,500
New York	New York†	......	....	....	......	......	....
Oneida	Rome	4	15,000	5,000	2	6	625
	Vernon	3	15,000	10,000	1	......	10,000
	Boonville	5	15,000	6,000	......	7	860
Ontario	Canandaigua	3	15,000	7,000	2	11	540
	Naples	3	7,000	4,000	3	......	1,330
Orange	Middletown	5	20,000	6,000	......	26	230
Orleans	Albion	4	15,000	7,000	1	12	540
Oswego	Fulton	4	10,000	5,000	......	7	710
	Sandy Creek	4	12,000	5,000	......	6	830
Otsego	Cooperstown	3	12,000	5,000	......	6	830
	Morris	4	10,000	4,000	3	......	1,330
	Oneonta	5	25,000	12,000	......	7	1,710
	Richfield Springs	4	....	....	1	?	?
Queens	Mineola	5	50,000	20,000	......	14	1,430
Rensselaer	Troy‡	......	....	....	......	......	....
	Nassau	4	10,000	5,000	1	11	420
Rockland	Orangeburg	3	20,000	10,000	1	......	10,000
	New City	4	1,500	500	......	......	....
St. Lawrence	Canton	4	....	....	......	10	....
	Ogdensburg	4	15,000	8,000	......	34	240
	Gouverneur	4	20,000	8,000	......	10	800
	Potsdam	4	15,000	7,000	......	20	350
Saratoga	Ballston Spa	4	30,000	16,000	3	......	5,330
Schoharie	Cobleskill	5	35,000	12,000	......	14	860
Schuyler	Watkins	4	30,000	15,000	3	......	5,000
Seneca	Waterloo	3	20,000	10,000	1	......	2,000
Steuben	Bath	4	25,000	15,000	1	30	480
	Hornell	4	40,000	20,000	......	8	2,500
	Troupsburg	4	....	3,000	1	......	3,000
Suffolk	Riverhead	4	30,000	12,000	......	50	240
Sullivan	Monticello	4	8,000	5,000	......	6	830

Table No. 1 — Concluded

COUNTY	Location	Days open	Attendance		Water supply		
			Total	Maximum	Wells, number	Public supply, taps	Pers pe ta
Tioga	Owego	4	15,000	6,000	7	......	
Tompkins	Ithaca	4	35,000	15,000	3	......	5,
	Trumansburg	4	20,000	10,000	2	......	5,
Ulster	Ellenville	4	15,000	5,000	......	10	
Warren	Warrensburg	4	8,000	5,000	......	9	
Washington	Hudson Falls	4	40,000	25,000	......	25	1,
	Cambridge	4	25,000	12,000	8	10	
Wayne	Lyons	3	6,000	4,000	1	......	4,
	Newark	......	....	....	......	......	...
	Palmyra	3	18,000	12,000	1	8	1,
Westchester	White Plains	3	....	....	......	......	...
Wyoming	Warsaw	4	30,000	12,000	......	10	1,
	Perry	3	5,000	2,500	......	10	
Yates	Penn Yan	4	10,000	4,000	......	5	
	Dundee	4	8,000	5,000	2	......	2,

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* New grounds purchased at Gloversville not yet equipped.
† Under jurisdiction of New York City Health Department.
‡ Grounds sold.

NEW YORK STATE — SEWAGE DISPOSAL

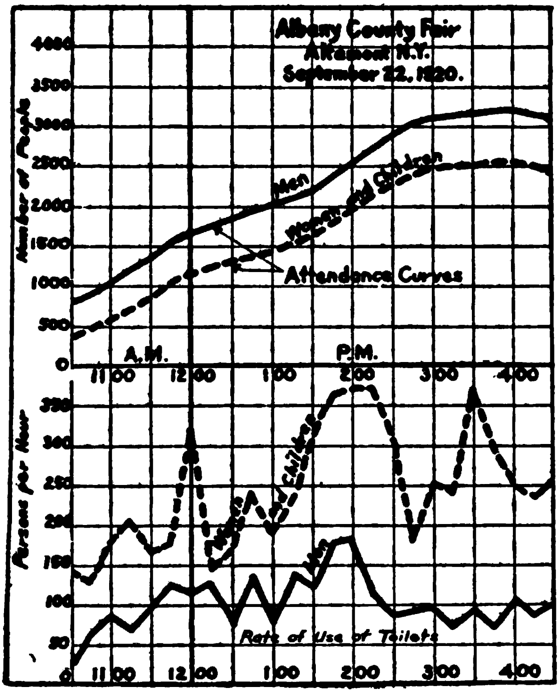
Table No. II

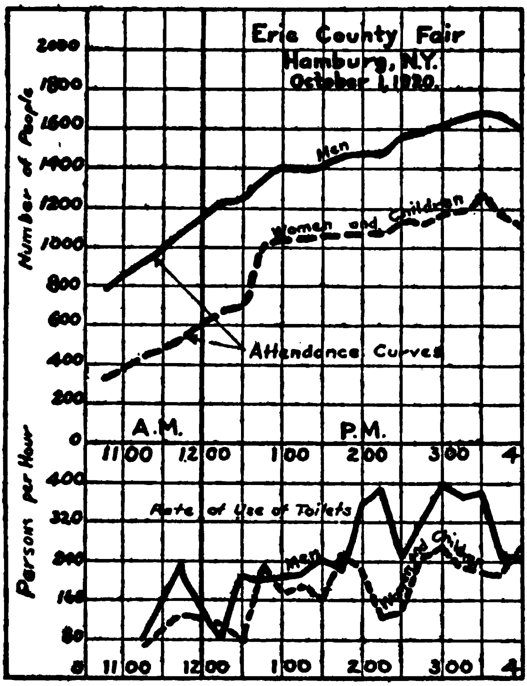
COUNTY	Location	Maximum attendance	Privies			Flush closets			Per 1,000 maximum attendance		
			Men		Women	Men		Women	Men		Women
			Seats	Urinals	Seats	Seats	Urinals	Seats	Seats	Urinals	Seats
Albany	Altamont	7,500	10	5	10	....	....	....	1.3	0.7	1.3
Allegany	Angelica	5,000	12	5	7	....	....	....	2.4	1.0	1.4
	Cuba	12,000	7	6	6	....	....	....	0.6	0.5	0.5
	Wellsville	1,500	9	....	....	1	3	2	6.7	2.0	1.3
Broome	Whitney Point	1,500	6	8	18	....	....	....	4.0	5.4	12.0
	Binghamton	25,000	15	12	16	....	....	....	0.6	0.5	0.6
Cattaraugus	Little Valley	12,000	7	20	16	....	....	....	0.6	1.7	1.3
Cayuga	Moravia	8,000	6	....	11	....	....	....	0.7	....	1.4
Chautauqua	Dunkirk	12,000	16	12	3	....	....	6	1.3	1.0	0.7
Chemung	Elmira	10,000	8	....	9	....	....	....	0.8	....	0.9
Chenango	Norwich	8,000	7	8	8	....	....	....	0.9	1.0	1.0
	Afton	7,000	12	9	17	....	....	....	1.7	1.3	2.4
Clinton	Plattsburg	3,000	30	....	28	6	....	....	12.0	....	9.3
Columbia	Chatham	12,000	30	....	19	....	....	....	2.5	....	1.6
Cortland	Cortland	25,000	12	10	34	2	....	....	0.6	0.4	1.4
Delaware	Delhi	5,000	1	....	4	....	....	....	0.2	....	0.8
	Walton	5,000	....	....	....	7	6	10	1.4	1.2	2.0
Dutchess	Rhinebeck	10,000	18	12	8	....	....	....	1.8	1.2	0.8
Erie	Hamburg	25,000	14	....	....	28	24	40	1.7	1.0	1.6
Essex	Westport	7,000	13	4	....	....	....	6	1.9	0.6	0.9
Franklin	Malone	20,000	....	....	....	20	22	15	1.0	1.1	0.8
Fulton	Johnstown*	....	....	....	....	....	....	....	....	....	....
Genesee	Batavia	20,000	36	16	26	25	30	48	3.0	2.3	3.7
Greene	Cairo	5,000	7	3	22	....	....	....	1.4	0.6	4.4
Herkimer	Herkimer	10,000	11	12	14	....	....	....	1.1	1.2	1.4
Jefferson	Watertown	15,000	12	16	10	....	....	....	0.8	1.1	0.7
	Cape Vincent	1,000	2	3	14	....	....	....	2.0	3.0	14.0
Lewis	Lowville	12,000	....	....	17	12	14	20	1.0	1.1	3.1
Livingston	Avon	7,000	5	5	4	....	....	....	0.7	0.7	0.6
	Hemlock	16,000	14	16	24	....	....	....	0.9	1.0	1.5
	Caledonia	4,000	10	....	?	....	....	....	2.5	....	?
Madison	Brookfield	2,500	8	5	16	....	....	....	3.2	2.0	6.4
	DeRuyter	4,000	4	5	8	....	....	....	1.0	1.2	2.0
Monroe	Brockport	12,000	18	18	12	....	....	....	1.5	1.3	1.0
	Rochester	25,000	....	....	....	34	51	48	1.4	2.0	1.9
Montgomery	Fonda	10,000	14	5	10	....	....	....	1.4	0.5	1.0
New York	New York†	....	....	....	....	....	....	....	....	....	....
Oneida	Rome	5,000	8	....	12	....	....	....	1.6	....	2.4
	Vernon	10,000	8	17	20	....	....	....	0.8	1.7	2.0
	Boonville	6,000	9	....	14	....	....	....	1.5	....	2.3
Ontario	Canandaigua	7,000	8	8	16	....	....	....	1.1	1.1	2.3
	Naples	4,000	9	?	10	....	....	....	2.2	?	2.5
Orange	Middletown	6,000	37	39	13	....	....	1	6.1	6.5	2.3
Orleans	Albion	7,000	18	5	20	....	....	....	2.6	0.7	2.9
Oswego	Fulton	5,000	26	....	7	....	....	....	5.2	....	1.4
	Sandy Creek	5,000	13	13	17	....	....	....	2.6	2.6	3.4
Otsego	Cooperstown	5,000	6	....	20	....	....	....	1.2	....	4.0
	Morris	4,000	6	....	12	....	....	....	1.5	....	3.0
	Oneonta	12,000	23	20	12	....	....	1	1.9	1.7	1.1
	Richfield Spgs	....	2	....	8	....	....	....	....	....	....
Queens	Mineola	20,000	26	25	34	....	....	8	1.3	1.2	2.1
Rensselaer	Troy‡	....	....	....	....	....	....	....	....	....	....
	Nassau	5,000	16	8	22	....	....	....	3.2	1.6	4.4
Rockland	Orangeburg	10,000	8	....	13	....	....	....	0.8	....	1.3
	New City	500	5	....	....	....	....	....	10	....	....
St. Lawrence	Canton	....	17	6	21	....	....	....	....	....	....
	Ogdensburg	8,000	....	....	....	10	10	10	1.2	1.2	1.2
	Gouverneur	8,000	12	....	....	....	....	6	1.5	....	0.7
	Potsdam	7,000	6	....	9	....	....	6	0.9	....	1.3
Saratoga	Ballston Spa	16,000	21	11	10	....	....	....	1.3	0.7	0.6
Schoharie	Cobleskill	12,000	7	....	2	7	5	15	1.2	0.4	1.4
Schuyler	Watkins	15,000	4	....	7	....	....	....	0.3	....	0.5
Seneca	Waterloo	10,000	6	9	7	....	....	....	0.6	0.9	0.7

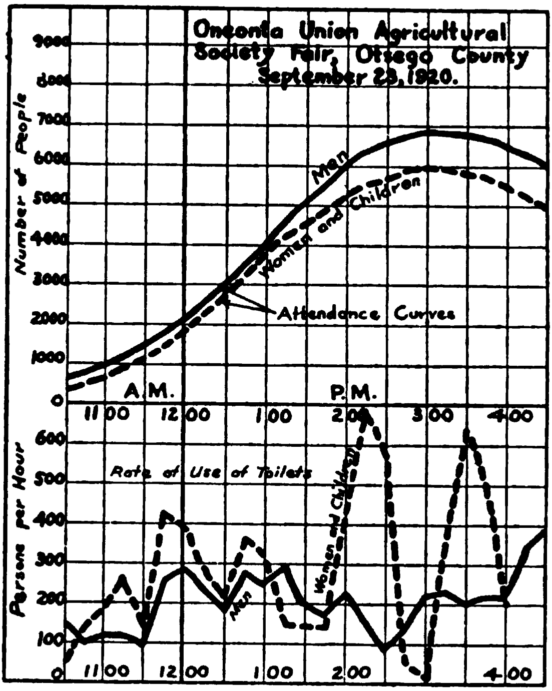
Table No. II — Concluded

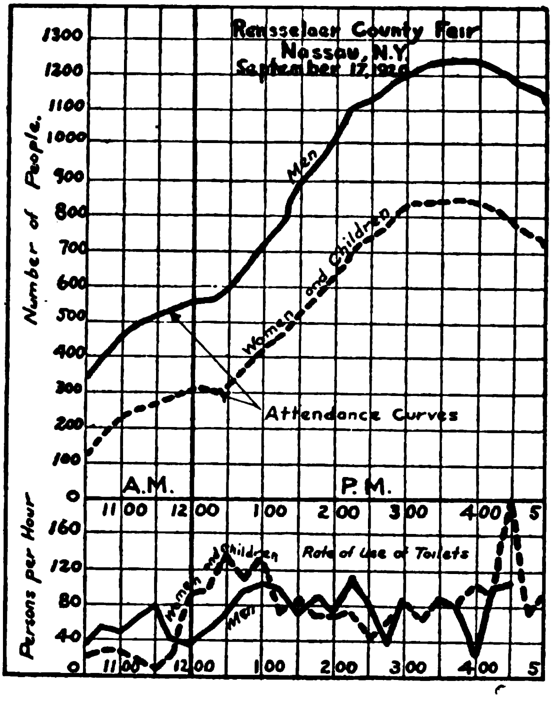
COUNTY	Location	Maximum attendance	Privies			Flush closets			Per 1,0 maximu attendan	
			Men		Women	Men		Women	Men	
			Urinals	Seats	Seats	Urinals	Seats	Seats	Urinals	Seats
Steuben	Bath	15,000	20	24	22	...	...	...	1.3	1.
	Hornell	20,000	7	17	...	...	...	14	0.3	0.
	Troupsburg	3,000	3	...	4	...	...	...	1.0	...
Suffolk	Riverhead	12,000	15	20	...	...	...	16	1.2	1.
Sullivan	Monticello	5,000	7	...	7	...	...	...	1.4	...
Tioga	Owego	6,000	8	...	11	...	...	...	1.3	...
Tompkins	Ithaca	15,000	14	6	17	...	...	...	0.9	0.
	Trumansburg	10,000	6	21	14	...	...	...	0.6	0.
Ulster	Ellenville	5,000	14	6	8	...	...	...	2.8	1.
Warren	Warrensburg	5,000	14	...	18	...	...	...	2.8	...
Washington	Hudson Falls	25,000	20	15	30	...	...	...	0.8	0.
	Cambridge	12,000	32	20	52	20	7	...	4.3	2.
Wayne	Lyons	4,000	...	...	...	...	...	...	...	...
	Newark	...	...	...	...	...	...	...	...	...
	Palmyra	12,000	15	10	20	...	...	...	1.2	0.
Westchester	White Plains	...	5	4	1	...	...	...	...	...
Wyoming	Warsaw	12,000	19	8	4	...	...	...	1.6	0.
	Perry	2,500	11	...	9	...	6	...	4.4	2.
Yates	Penn Yan	4,000	3	5	8	...	...	...	0.7	1.
	Dundee	5,000	6	12	10	...	...	...	1.2	2.

* New grounds purchased at Gloversville, not yet equipped.
† Under jurisdiction of New York City Health Department.
‡ Grounds sold.


Albany County Fair
Altamont N.Y.
September 22, 1920.
Number of People
4000
3500
3000
2500
2000
1500
1000
500
0
Men
Women and Children
Attendance Curves
A.M.
P.M.
11 00
12 00
1 00
2 00
3 00
4 00
Persons per Hour
350
300
250
200
150
100
50
0
Women and Children
Men
Rate of Use of Toilets
11 00
12 00
1 00
2 00
3 00
4 00


Erie County Fair
Hamburg, N.Y.
October 1, 1920.
Number of People
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Men
Women and Children
Attendance Curves
A.M.
P.M.
11 00
12 00
1 00
2 00
3 00
4
Persons per Hour
400
320
240
160
80
0
Rate of Use of Toilets
Men
Women and Children
11 00
12 00
1 00
2 00
3 00
4


Oneonta Union Agricultural Society Fair, Otsego County
September 23, 1920.
Number of People
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Men
Women and Children
Attendance Curves
A.M.
P.M.
11 00
12 00
1 00
2 00
3 00
4 00
Persons per Hour
600
500
400
300
200
100
0
Rate of Use of Toilets
Women and Children
Men
11 00
12 00
1 00
2 00
4 00


Rensselaer County Fair
Nassau, N.Y.
September 17, 1920
Number of People.
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
Men
Women and Children
Attendance Curves
A.M.
P.M.
11 00
12 00
1 00
2 00
3 00
4 00
5
Persons per Hour
160
120
80
40
0
Rate of Use of Toilets
Women and Children
Men
11 00
12 00
1 00
2 00
3 00
4 00
5

ATTENDANCE AT CERTAIN COUNTY FAIRS, 1920

Table No. III

LOCATION	Date	Attendance	Maximum on grounds	Per cent on grounds at one time
Altamont	Sept. 22, 1920	6,373	5,752	90.0
Oneonta	Sept. 23, 1920	13,758	12,705	92.5
Oneonta	Sept. 24, 1920	5,674	4,320	76.0
Nassau	Sept. 16, 1920	3,400	2,570	76.0
Nassau	Sept. 17, 1920	2,657	2,090	79.0
Average	....	....	....	82.7

LOCATION	PERCENTAGE		PERCENTAGE OF MAXIMUM ON GROUNDS AT ONE TIME	
	Men	Women and children	Men	Women and children
Altamont	55.4	44.6	49.86	40.14
Oneonta	53.3	46.7	49.40	42.40
Oneonta	54.6	45.4	41.00	34.00
Nassau	53.5	46.5	40.70	35.00
Nassau	59.3	40.7	41.80	32.20
Average	55.2	44.8	44.55	36.71

USE OF TOILETS AT CERTAIN COUNTY FAIRS, 1920

Table No. IV

LOCATION	Date	Attendance	MAXIMUM NUMBER USING TOILETS PER HOUR PER 1,000 ATTENDANCE			
			MAXIMUM RATE		MAXIMUM FOR ONE HOUR	
			Men	Women and children	Men	Women and children
Altamont	Sept. 22, 1920	6,373	29	58	19	56
Oneonta	Sept. 23, 1920	13,758	28	47	27	38
Nassau	Sept. 16, 1920	3,400	23	74	20	65
Nassau	Sept. 17, 1920	2,657	41	72	34	44
Average	....	....	30	63	25	51
Hamburg	Oct. 1, 1920	3,580	111	76	103	67

Observations at Nassau indicated that the ratio of the use of seats to the use of urinals at that fair was about 15:100.

At Hamburg, where it rained almost continuously during the fair, the number using the toilets was over twice the average for the other fairs.

REFUSE DISPOSAL

A number of investigations were made during 1921 by this Division, of public nuisances created by the improper disposal of municipal refuse, including a number of nuisances caused by inadequate or improperly operated incinerator plants. In each case a report was prepared and transmitted to the local authorities in which the results of the investigation were set forth and recommendations made as to the proper treatment and disposal of refuse. Under the provisions of chapter 247 of the Laws of 1921 plans and specifications for a garbage and rubbish incinerator for the village of Port Chester were submitted to this Department for approval before construction. These plans and specifications were approved on August 16, 1921. The report on the examination of the plans and specifications follows:

Hermann M. Biggs, M. D., *State Commissioner of Health:*

I wish to submit the following report upon the examination of plans and specifications for the proposed garbage and rubbish incinerator for the village of Port Chester, Westchester county, N. Y., submitted to this Department for approval in accordance with the provisions of Chapter 247 of the Laws of 1921, on July 12, 1921.

General

Port Chester has a population of about 17,000 persons and is situated on Long Island Sound and the Byram river in the eastern part of Westchester county some 20 miles from New York City. The Byram river forms the boundary line between the states of New York and Connecticut at this point. The village has a public water supply derived from Pipen and Horseneck brooks and a public sewerage system and disposal works whose effluent discharged into Long Island Sound.

Site

The site upon which it is planned to locate the incinerator plant is adjacent to the present public dump on the southerly side of Fox Island road, at a point opposite and about 100 feet beyond the site of the village sewage disposal works. It is situated on the southerly shore of the neck of the peninsula which lies between Byram river and Port Chester harbor. The site provided is about 250 feet wide and has a total depth of about 750 feet of which about 1/10 lies between the road and the present harbor shore. There is one factory near the proposed plant. The nearest residences are reported to be on the opposite side of the Byram river in the state of Connecticut, at a distance of about 1,000 feet.

Incinerator Plant

According to the plans and specifications submitted the incinerator plant is to consist of 3 separately specified items, viz: a building, an incinerator furnace and a smoke stack. It is stated that the stack is built on rock and that a portion of the building is to be on rock and the remainder on heavy piling. No attempt has been made by us to pass upon the foundation or on the stability of the different structures.

The plant is designed to consume 30 tons of refuse per 24 hours. According to data furnished by the designing engineer the maximum amount of refuse, including garbage and rubbish collected a day is about 6 tons. This does not include ashes which are to be disposed of separately. It appears, therefore, that the incinerator need be operated only 8 hours per day without exceeding its capacity for a considerable time in the future.

Building.— The building to house the incinerator is to be a concrete structure about 30 feet square, designed with two floors or stories connected by a stairway and covered by a slag roof. The upper or charging floor is to be of reinforced concrete and is to be at an elevation of 24 or about level with Fox Island road, with which it is connected with a short driveway passing across the center of the floor. The entrance and exit are protected by rolling lift steel doors. The charging floor is to be provided with a rectangular opening about 3 feet by 4 feet, guarded by double doors arranged for dumping refuse into the incinerator furnace below. A toilet on an elevated platform and chute for boxes are also provided on this floor.

The basement or incinerator floor is at elevation 11.5. On one side of this room is shown an exterior smoke breeching and on another side is to be provided an exterior coal bin, each 5 feet in width. This floor or room will contain the incinerator, combustion chamber, smoke breechings and forced draft fan. In this room will also be located a boiler feed pump, a small engine to drive the forced draft fan and a preheater by means of which the air draft is to be heated by being passed through a chamber containing pipes through which the hot fumes from the incinerator pass on their way to the stack.

Incinerator furnace.— The incinerator shown by the plans is of the medium temperature Decaric type and consists of a steel water jacket furnace equipped with a water-cooled basket-grate composed of heavy pipe, which branch from a central header and connect with the water space of the furnace. This grate, upon which the refuse falls from the charging floor above the furnace, is suspended above a 5-foot by 8-foot shaking grate, upon which coal is burned when the furnace is started and coal and refuse or refuse alone is burned under forced draft after the furnace is in full operation. Steam for driving the fan and supplying forced draft is generated in the furnace so that it will act as a steam boiler.

Combustion chamber.— This chamber is to be located adjacent to the end of the incinerator furnace and is to be constructed of steel plate with fire brick lining. A checker wall is to be placed near the entrance to the chamber to serve as a screen, and hot air is to be introduced near this point. This chamber is intended to act as a combustion chamber to burn the unconsumed gases given off from the incinerator. It will also act as a dust chamber inasmuch as the velocity of the gases will be checked, due to the enlarged cross section. Clean-out doors are to be provided in the sides of this chamber through which the dust may be removed.

Preheater.— This heater is to be installed at the lower end of the combustion chamber and consists of numerous steel tubes through which the gases of combustion are to pass. The air from the fan is to be forced through the preheater around the outside of the tubes, through which the gases pass for the purpose of heating the forced draft used in the incinerator and combustion chamber. Beyond this preheater is the smoke breeching. Provisions are made, however, for by-passing the preheater and passing the gases of combustion direct to the stack.

Stack.— The plans and specifications show that it is planned to build a perforated radial brick chimney 100 feet in total height. It is to have a minimum diameter of 3½ feet, and is to be lined with fire brick to a height of 20 feet. To this height it is to be octagonal in form and above this point it is to be cylindrical. The stack is to be located about 5 feet from the smoke breeching and between the latter and the road. A lightning conductor and interior ladder is to be provided. The chimney or stack of the size and character designed, while none too capacious, if properly constructed should be sufficient to meet the present needs of the type of incinerator plant required for the village.

Method of Operation

As stated above it is planned to operate the incinerator only 8 hours a day at first or until the amount of refuse collected is so increased as to require longer periods of operation. In starting the incinerator a coal fire will be built on the shaking grate of the incinerator or, if a banked fire is maintained during the night, additional coal will be added. This fire will be maintained under natural draft until the furnace is heated and sufficient steam is generated to drive the fan which supplies the forced draft before any refuse is discharged into the incinerator. The fan is then to be put into operation, forcing the air through the preheater, where it will be heated before it is applied to the duct under the fire grates in the form of a forced draft.

When the required temperature is obtained in the furnace, which should not be less than 1200° or 1400° F., the refuse is to be discharged into the incinerator from charging floor above through a hopper provided with automatic closing doors, which should tend to prevent the gases of combustion from escaping into the charging room under the forced draft of the incinerator or cold air from entering the furnace. The refuse falls onto the water-cooled basket-grate of the incinerator suspended above the shaking or fire grate, to prevent the wet garbage from falling onto and choking the fire below. Vertical water-cooled pipes extend up along the inside of the incinerator to prevent wet material from coming in contact with the cold sides of the water-jacketed furnace. The fire from the coal and from the ignited dried material will pass up through and around the refuse drying and igniting it. The unconsumed gases and gases of combustion will then pass into the combustion chamber where additional air will be added and where a complete combustion of the gases should be effected, provided a sufficiently high temperature and a proper mixture of air is maintained. This chamber as well as the breeching, should act as dust chambers and prevent the escape of dust into and from the stack. The efficiency of the plant and freedom from objectionable odors will depend largely upon the completeness of the combustion in the incinerator and combustion chamber. In order to obtain complete combustion an adequate supply of air should be provided, the temperature should be maintained at not less than 1200° or 1400° Fahrenheit and no garbage should be discharged into the incinerator until this temperature is obtained. Pyrometers should be provided in order to enable the operator to determine the temperature in the incinerator and combustion chambers.

It appears usual to provide an induced draft fan in addition to a force draft fan in order to prevent the escape of gases into the room above the incinerator during the charging process. It would seem well to so construct the plant as to readily permit of installing an induced draft fan if found necessary or desirable.

Trial Run

The specifications stipulate that, upon the completion of the incineration plant, the contractor shall operate the plant continuously for a period of 48 hours. The refuse to be incinerated or destroyed at the trial run is to consist of 65 per cent garbage by weight, 33 per cent rubbish by weight and 2 per cent dead animals by weight. A variation of 10 per cent above or below the proportion of garbage, rubbish and dead animals specified is to be allowed in the test.

It is noted in the addenda specifications that the garbage used during the trial run shall have a moisture content of not greater than 80 per cent. The minimum moisture content of the garbage should also be stated or stipulated in specifications.

The specifications also stipulate among other things that the successful bidder for the construction of the incinerator shall make the following guarantees:

1. That the plant, under normal operation will cause no nuisance from the escape of obnoxious odors, smoke or grease from either the building or the stack.
2. That the refuse shall be incinerated to a mineral ash free from organic material.

I am of the opinion that the bond of the contractor should be so drawn as to insure the results guaranteed above.

Conclusions and Recommendations

In conclusion I would state that, in my opinion, if the above guarantees are fully carried out and if the proposed incinerator plant is properly constructed and operated with care and efficiency, it should satisfactorily care for the garbage and rubbish of the village for a reasonable period in the future. Although the type of furnace or incinerator shown has lower temperatures when in operation than some other types, I believe that it can be so operated as to obtain complete combustion and prevent the creation of a nuisance. If some other type of incinerator is adopted, detailed plans for such incinerator should be submitted to this Department for approval before it is installed.

In view of the results of our examination of the plans and specifications and after a careful consideration of the essential features of design and the local and general requirements for the proper methods of the disposal of garbage and rubbish in the village of Port Chester, I would recommend that these plans and specifications be approved.

Respectfully submitted

C. A. HOLMQUIST

Director, Division of Sanitation

ALBANY, N. Y., *August* 15, 1921

On September 30, 1921, amended plans providing for modification of the incinerator building were approved.

ative Document (1922) No. 27

STATE OF NEW YORK

FORTY-SECOND ANNUAL REPORT

OF THE

te Department of Health

For the Year Ending December 31, 1921

VOL. 2

Division of Vital Statistics

ALBANY
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FORTY-SECOND ANNUAL REPORT OF THE STATE DEPARTMENT OF HEALTH

April 28, 1924

MATTHIAS NICOLL, JR., M. D., *State Commissioner of Health,*
Albany, N. Y.:

SIR.—It is my privilege to transmit herewith the annual report of the Division of Vital Statistics for the calendar year 1921, which is the forty-second report of the State Department of Health on the registration of births, marriages, and deaths, and its thirty-seventh annual compilation of statistics of same.

There has been a delay of a number of months in the final publication of this report owing to a misunderstanding on the part of another State Department concerning the appropriation for its printing. Immediately upon discovery of this, steps were taken to expedite the report as rapidly as possible.

You will find the contents of this report comparable in practically all important respects with the standard tables presented in this Division's report for 1920, except that the sequence of the tables has been improved and there have been added several important tables of marriage statistics for the year 1920.

Deserving of special mention are Miss Ella H. Porter, who supervised the compilation of the primary data for births and deaths, including the derivative data; Mr. Paris R. Eastman, who had charge of the mechanical tabulations, gave important aid in the design of the birth and marriage tables and who supervised the entire compilation of the latter, and Miss Carolyn A. Boudo, who prepared the introductory comment and reviewed the final proofs.

We are also indebted to the office of the Attorney-General for their ever willing and courteous aid in the legal technicalities of registration procedure.

Most of all, I feel personally obligated and grateful to you and our late Commissioner, Dr. Hermann M. Biggs, for your generous policy toward the development of our statistical reports and your constant encouragement.

Very truly yours

OTTO R. EICHEL

Director

REVIEW OF VITAL STATISTICS FOR THE YEAR

Population

The population of New York State, estimated as of July was 10,543.105; that of New York City, 5,751,859; and t of the State, 4,791,246. These estimates were computed simple arithmetic method using the State Enumeration o and the U. S. Census of 1920 for the rest of the State, a U. S. Censuses of 1910 and 1920 for New York City. Tl mates for the rest of the State and all its subdivisions from 1921 were revised using the State Enumeration of 1915 a U. S. Censuses of 1910 and 1920 and the rates presented historical tables are based upon these new estimates.

Births

The number of live births registered in the State nu 240,210 — a rate of 22.8 per 1,000 estimated population number registered in 1920 was 235,460 with a rate of 22. increase in 1921 was very slight, only 4,750 births compar an increase of 9,191 in 1920 over 1919. The sudden incr 1920 was to be expected as a natural reaction after the w the rate for 1921 indicates that there is already a slowing this increase.

Marriages

In 1921 there were registered in this State 101,437 ma 9,843 less than in 1920. The rate was 19.2 persons marr thousand total population, while in 1920 it was 21.3. Tl rate in 1920 was to be expected after the termination of t and the rate for 1921 indicates a return to the normal rate At the end of this report will be found extensive tables, ing many correlation tables, on marriage statistics for tl 1920. They show the color, age, conjugal condition, r of bride and groom, month of marriage, relative ages of ea These tables supplement those already published for tl 1919 and for the years 1916–1918 combined.

Deaths

The outstanding feature of the mortality for 1921 was t low general death rate. For the whole State the rate w representing the very lowest death rate on record for th The 1920 rate of 13.8 was lower than any previously r rate and the drop to 12.3 was indeed most exceptiona number of deaths was 130,110, the smallest number on since 1904 when the population of the State was only abo million. If the average rate of 1913–1917, 15.2, had p there would have been 160,255 deaths in this year, or 30,1 than actually occurred.

The death rates for New York City and for the rest of the State for 1921 were likewise the lowest on record, New York City's being 11.2, and that for the rest of the State, 13.7. When these rates were adjusted for the age and sex composition of the population according to the Standard Million of England and Wales, the following results were obtained:—

AREA	CRUDE RATES			ADJUSTED RATES		
	Male	Female	Total	Male	Female	Total
New York State	12.8	11.8	12.3	12.4	11.6	12.0
New York City	11.8	10.5	11.2	12.9	12.0	12.4
Rest of State	14.0	13.3	13.7	11.9	11.4	11.7

The specific age rates by sex for New York City and the rest of the State are noteworthy:—

AGES	DEATH RATES PER 1,000 POPULATION AT EACH AGE GROUP			
	MALES		FEMALES	
	New York City	Rest of State	New York City	Rest of State
0–4 years	26.375	27.179	21.537	22.280
5–9 years	3.378	3.348	2.657	2.705
10–14 years	2.420	2.431	2.058	2.055
15–19 years	3.293	3.562	2.817	3.015
20–24 years	4.137	4.267	3.590	4.292
25–34 years	4.707	4.804	4.371	4.880
35–44 years	7.892	7.036	6.709	6.342
45–54 years	15.041	11.484	12.414	10.838
55–64 years	31.462	23.978	28.029	21.824
65–74 years	65.620	55.043	59.815	50 297
75 years and over	130.974	140.008	125.960	132.927

It will be seen that in general the rates under 35 years are slightly *lower* in New York City than in the rest of the State; that the rates from 35–74 years are *higher* in New York City than in the rest of the State; and that those for 75 years and over are *lower* for New York City than for the rest of the State.

The ten leading causes of death in 1921 were as follows:—

	Number deaths
Organic heart disease and endocarditis	23,0
Pneumonia and influenza	11,4
Cancer	11,1
Tuberculosis (all forms)	10,7
Nephritis and Bright's disease	9,4
Accidents	7,1
Cerebral hemorrhage and apoplexy	7,1
Congenital debility and malformations	6,9
Arteriosclerosis	4,6
Diarrhea and enteritis (under 2 years)	3,9

A comparison of the mortality from various diseases in 19
with that in 1921 shows that the decrease in 1921 was due chief
to a lower mortality for the diseases of the respiratory syste
The very low mortality in the winter months of 1921 bears th
out. Applying the death rate of 1920, 13.8, to the population
New York State in 1921, we find that there would have be
145,495 deaths this year instead of 130,110 — a saving of 15,3
lives. The death rate from influenza, pneumonia, bronchitis, a
pulmonary tuberculosis combined in 1920 was 336.8 per 100,0
population; in 1921, 208.4. If the 1920 death rate for this grou
had prevailed in 1921 there would have occurred 35,509 deat
instead of 21,975, a saving of 13,534 lives or 88% of the tot
saved.

The very low death rates in New York State in 1921 were lik
wise manifest throughout the whole U. S. Registration Area a
in certain foreign countries. The Registrar-General of Engla
and Wales reported the lowest general death rate ever record
and attributed the fact to the favorable meteorological conditio
which prevailed, the year 1921 as a whole being the warmest a
driest (i.e., of lowest rainfall) for many years.

Infant Mortality

The number of deaths under 1 year of age in 1921 for t
entire State was 18,070, 2,256 less than in 1920 and the rate
proportion to each 1,000 live births was 75 as compared wi

of 86 for the preceding year. This was the lowest rate on l for the State and is an index of the progress that is being in health work. The reduction occurred chiefly among the ing diseases:

	NUMBER OF DEATHS UNDER 1 YEAR	
	1921	1920
and enteritis	3,354	3,947
	106	306
g cough	417	520
ia (all forms)	2,209	2,910
is	390	672
	97	404

rrhea and enteritis (under 2 years), a very important cause ath among infants, resulted in 3,952 deaths in 1921 correing to a mortality of 37.5 per 100,000 population, whereas 20 it caused 4,662 deaths with a rate of 44.7. Of the 3,952 s in 1921, 3,354 were under *one* year of age, making diarrhea nteritis responsible for 18.6 per cent of the infant mortality s year. The death rate from this cause should be based upon umber of births each year to give a more accurate index of tions. In comparing New York City with the rest of the this is especially true. There were 1,702 deaths under one from this disease in New York City and 1,652 in the rest of tate, but the rate in each per 1,000 live births was 12.7 in York City and 15.6 in the rest of the State. The death rate 00,000 population from this cause has been declining rapidly, ing been as high as 123.1 in 1900.

	Deaths	Rate per 100,000 population
1917 (annual average)	6,154	62.8
	5,122	50.1
	4,191	40.6
	4,662	44.7
	3,952	37.5

genital debility and malformations caused 6,959 deaths in corresponding to a rate of 66.0 per 100,000 population. Of tal 6,959 deaths, 6,853 occurred in the *first* year of life — , therefore, comprised 37.9 per cent of the total infant mor- of the State. Of the total 6,853 deaths under one from these conditions, 3,391 occurred in New York City and 3,462 the rest of the State. In proportion to 1,000 live births in ea area, the rates were 25.3 for New York City and 32.7 for t rest of the State.

Year	Deaths	Rate p 100,0 populat
1913–1917 (annual average)	8,178	83
1918	7,995	78
1919	7,135	69
1920	7,115	68
1921	6,959	66

Important Causes of Death

Typhoid fever. The number of deaths allocated to this dise in 1921 was 377, only 6 more than in 1920. The annual avera number of deaths in 1916–1920 was 503 and the rate 4.9 p 100,000 population.

Measles. The deaths ascribed to measles in 1921 were 412 number, corresponding to a mortality of 3.9 per 100,000 populati This is considerably lower than the rate for 1920, which was 10 with a total of 1,101 deaths. The annual average rate for 191 1920 was 8.9 with 914 deaths.

Scarlet fever caused 666 deaths this year, the mortality bei 6.3 per 100,000 population,— an increase over 1920 of 216 deat in number and of 2.0 points in rate. Compared with the ann average number and rate of 1916–1920, there was an increase 1921 of 376 deaths and 3.5 points in rate.

Whooping cough in 1921 caused 756 deaths, the mortality bei 7.2 per 100,000 population; the rate for 1920 was 9.6 with 1,0 deaths and the 1916–1920 average was 8.2 with 836 deaths.

Diphtheria caused 1,702 deaths this year with a mortality r of 16.1 per 100,000 population. This is below the 1920 rate, whi was 18.2 with 1,904 deaths and the annual average for 1916–19 which was 17.6 with 1,803 deaths.

Cerebrospinal meningitis. The deaths classified to this headi during 1921 numbered 249, corresponding to a rate of 2.4 p 100,000 population. This shows an increase over 1920 of 59 deat and 0.6 in rate. The annual average number for 1916–1920 w 307 with a rate of 3.0.

Acute anterior poliomyelitis (infantile paralysis) was the ca of 266 deaths in 1921, corresponding to a mortality of 2.5 p 100,000 population. There was an extensive prevalence of pol myelitis throughout the State during the summer and fall and m cases were reported in 1921 than in any year on record, exce 1916 and 1912. During the great epidemic of 1916 there occurr 3,351 deaths from this cause.

	Deaths	Rate per 100,000 population
17 (annual average)	737	7.5
	57	0.6
	35	0.3
	50	0.5
	266	2.5

nza caused 778 deaths this year, corresponding to a mor- 7.4 per 100,000 population. In 1920 there were 5,890 rom this disease, there being a slight recurrence of the in February of that year. The very mild winter of 1921 accounts for the low mortality from this cause this year.

	Deaths	Rate per 100,000 population
7 (annual average)	1,534	15.7
	26,502	259.1
	8,047	77.9
	5,890	56.4
	778	7.4

nary tuberculosis, including acute miliary, caused 9,407 the State this year — a rate of 89.2 per 100,000 popula- e number of deaths from this disease has decreased extra- y during the last few years, as shown in the following n:

	Deaths	Rate per 100,000 population
7 (annual average)	14,412	147.1
	15,052	147.2
	12,814	124.0
	11,030	105.7
	9,407	89.2

ulous meningitis has also decreased from an average of 100,000 population in 1913–1917 to 8.9 in 1919, 7.8 in 6.0 in 1921.

end of *all forms of tuberculosis* is shown by the following:

	Deaths	Rate per 100,000 population
7 (annual average)	16,322	166.6
	16,973	166.0
	14,478	140.1
	12,543	120.2
	10,775	102.2

The United States Bureau of the Census has adjusted the rates from tuberculosis for age and sex for the various subdivisions of the Registration Area. The 1921 rate for New York State when adjusted becomes 96.3. Among the 34 states of the Registration Area, New York State stands thirteenth on the list of adjusted rates. Of course, the rate for New York State should also be adjusted for residents and nonresidents, as the very excellent health resorts attract many people from outside the State.

Cancer (all forms combined) caused 11,163 deaths in 1921, corresponding to a rate of 105.9 per 100,000 population. This mortality has been increasing steadily:

Year	Deaths	Rate per 100,000 population
1913–1917 (annual average)	9,180	93.7
1918	9,876	96.6
1919	10,166	98.4
1920	10,539	101.0
1921	11,163	105.9

The 1921 rate when adjusted for age and sex (by the U. S. Census) becomes 96.0. The unadjusted rate for the U. S. Registration Area in 1921 was 86.0.

Diabetes which caused 2,220 deaths in 1921, corresponding to a rate of 21.1 per 100,000 population, shows but little change during a period of years:

Year	Deaths	Rate per 100,000 population
1913–1917 (annual average)	2,067	21.1
1918	2,076	20.3
1919	1,972	19.1
1920	2,188	21.0
1921	2,220	21.1

The rate for 1921 when adjusted (by the U. S. Census) for age and sex becomes 21.8, this being the highest adjusted rate for any State in the Registration Area. The unadjusted rate for the Registration Area was but 16.8 in 1921.

Cerebral hemorrhage and apoplexy (combined) caused 7,148 deaths in 1921, an increase of 296 deaths over 1920. This mortality has shown a slight upward trend since 1909.

Year	Deaths	Rate per 100,000 population
1913–1917 (annual average)	6,436	65.7
1918	7,019	68.6
1919	6,638	64.2
1920	6,852	65.6
1921	7,148	67.8

Organic heart disease and endocarditis (combined) caused more deaths in 1921 than any other cause of death,— 23,090 in number with a rate of 219.0 per 100,000 population,— an increase of 433 deaths over 1920. The mortality from this cause showed a continuous increase from 1908–1918. There was a marked drop in 1919, but the disease appears to have again resumed its normal increase:

Year	Deaths	Rate per 100,000 population
1913–1917 (annual average)	20,581	210.1
918	23,456	229.4
919	20,644	199.8
920	22,657	217.1
21	23,090	219.0

Arteriosclerosis in 1921 was the cause of 4,655 deaths, the rate 100,000 population being 44.2 The mortality from this cause shown a tendency to increase within recent years:

ar	Deaths	Rate per 100,000 population
3–1917 (annual average)	4,402	44.9
	4,616	45.1
	4,685	45.3
	4,883	46.8
	4,655	44.2

nchitis (acute and chronic combined) which caused 1,145 in 1921 has been decreasing of late years. There were 614 deaths in 1921 than in 1920.

	Deaths	Rate per 100,000 population
917 (annual average)	1,808	18.5
	1,839	18.0
	1,497	14.5
	1,759	16.9
	1,145	10.9

onia. The total deaths assigned to pneumonia (all forms) 10,645 in 1921, corresponding to a mortality of 101.0 0 population. This disease showed a remarkable decrease from 1920 when the rate was 157.8. This decrease occurr in bronchopneumonia and in lobar, as will be seen from lowing table:

YEAR	LOBAR PNEUMONIA AND UNQUALIFIED		BRONCHO-PNEUMONIA		ALL COM
	Deaths	Rate	Deaths	Rate	Deaths
1913–1917 (annual average)	10,108	103.2	6,939	70.8	17,047
1918	23,949	234.2	10,564	103.3	34,513
1919	9,712	94.0	7,384	71.5	17,096
1920	8,907	85.3	7,568	72.5	16,475
1921	5,866	55.6	4,779	45.4	10,645

Appendicitis caused 1,468 deaths in 1921, an increase deaths over 1920 and of 249 over the annual average of 191

Hernia and intestinal obstruction. There were reporte deaths from this cause in 1921, represented by a mortality per 100,000 population. This cause shows very little chan year to year, viz.:

Year	Deaths
1913–1917 (annual average)	1,227
1918	1,317
1919	1,222
1920	1,214
1921	1,226

Cirrhosis of the liver caused 729 deaths in 1921, a dec 50 deaths over 1920. The number of deaths allocated to t has been decreasing rapidly in recent years.

Year	Deaths
1913–1917 (annual average)	1,438
1918	998
1919	842
1920	779
1921	729

Nephritis and Bright's disease (acute and chronic disease) caused 9,481 deaths in 1921 and ranks fifth am leading causes of death. This death rate varied but little d long course of years; from 1900–1917 the death rate flu ween 112.6 and 132.9. It declined sharply in 1918, again in 9, slightly in 1920, and considerably in 1921, as seen by the e below:

ar	Deaths	Rate per 100,000 population
3–1917 (annual average)	12,113	123.7
8	11,315	110.6
9	10,540	102.0
0	10,481	100.4
1	9,481	89.9

uerperal causes. The number of deaths assigned to pregcy and childbirth was 1,396 in 1921, a decrease of 28 deaths 1920. The death rate from this cause has remained practiy stationary for the last ten years:

ar	Deaths	Rate per 100,000 population
3–1917 (annual average)	1,306	13.3
8	1,563	15.3
9	1,274	12.3
)	1,424	13.6
1	1,396	13.2

uerperal septicemia caused 412 deaths, or 30 per cent of the 6 deaths from all puerperal causes. This death rate has shown ndency to decrease within the last ten years, but there were 28 e deaths from this cause in 1921 than in 1920.

ar	Deaths	Rate per 100,000 population
3–1917 (annual average)	470	4.8
3	410	4.0
9	352	3.4
)	384	3.7
1	412	3.9

ince the better measure for mortality from these causes would rate based upon the number of births (live and still) reported year, such a table is given below with the rates on this basis New York State, New York City, and the Rest of State:

Deaths and Death Rates from all Puerperal Causes

YEAR	New York State		New York City		Rest of Stat	
	Number of deaths	Rate per 10,000 births (including stillbirths)	Number of deaths	Rate per 10,000 births (including stillbirths)	Number of deaths	Rate p 10,00 birth (includ stillbirt
1915	1,323	52.20	709	48.0	614	5
1916	1,231	49.06	657	45.8	574	5
1917	1,333	52.00	651	44.1	682	6
1918	1,563	61.63	664	45.8	899	8
1919	1,274	54.05	644	47.2	630	6
1920	1,424	57.97	708	50.9	716	6
1921	1,396	55.74	746	53.1	650	5

Old age, to which 708 deaths were allocated in 1921, showed rate of 6.7 per 100,000 population. This title may be regarded an index of the accuracy of statements as to the causes of death aged people, and as such it indicates constant improvement certification during recent years, viz.:

Year	Deaths	Rate p 100,00 populat
1913–1917 (annual average)	1,208	12
1918	826	8
1919	873	8
1920	838	8
1921	708	6

Accidents (all external causes except suicide and homicide) r sulted in 7,187 deaths in 1921, the rate per 100,000 populati being 68.2. During recent years a slight decrease in this rate w be noticed. The fact that accidents cause over 7,000 deaths a ye makes it one of the major causes of death,— in fact, in 1921 ranks sixth in importance:

Year	Deaths	Rate p 100,00 populat
1913–1917 (annual average)	8,112	82
1918	8,448	82
1919	7,433	71
1920	7,351	70
1921	7,187	68

tomobile accidents, which caused 1,629 deaths in 1921, are ily increasing in importance relative to other causes of death,

r	Deaths	Rate per 100,000 population
-1917 (annual average)................	608	6.2
....	1,216	11.9
....	1,361	13.2
....	1,439	13.8
....	1,629	15.5

cidental drowning showed a very marked increase over 1920, being 869 deaths from this cause alone compared with 726 in :

r	Deaths	Rate per 100,000 population
-1917 (annual average)................	1,042	10.6
....	909	8.9
....	869	8.4
....	726	7.0
....	869	8.2

icide showed a rate of 13.7 for this year which is the highest since 1917. There were 1,442 deaths in 1921,— 253 more than 20:

	Deaths	Rate per 100,000 population
-1917 (annual average)................	1,521	15.5
....	1,302	12.7
....	1,294	12.5
....	1,189	11.4
....	1,442	13.7

micide resulted in 501 deaths in 1921,— 53 more than in This rate has shown a tendency to increase in recent years, dicated in the table below:

	Deaths	Rate per 100,000 population
-1917 (annual average)................	425	4.3
....	385	3.8
....	430	4.2
....	448	4.3
....	501	4.8

Joint Causes of Death

For the year 1921 a special table has been prepared showing the contributory causes of death in relation to the primary causes for all the deaths occurring in the State outside of New York City. The table is too large to be published in detail in this report, but a summary follows. Of the 65,853 deaths recorded there were 26,469, or 40 per cent, where more than one disease was given as the cause of death.

The table is to be read as follows: There were 254 deaths assigned to typhoid fever as the preferred cause of death; there were 3 other deaths (in addition to the 254) where typhoid fever was given as the contributory cause; of the 254 typhoid deaths, 107 of them had some other disease or condition given as a contributory cause.

Some of the outstanding features of the table are as follows:

> Of the 247 deaths from measles, only 45 were returned as having no complications.
>
> Septicemia and purulent infection had 96 deaths charged to it, while there were 268 other deaths where septicemia contributed to the death.
>
> There were 61 deaths allocated to alcoholism while in addition, there were 55 deaths where alcoholism was a contributory cause.
>
> Meningitis is credited with 208 deaths, but there were 314 other deaths which were complicated with meningitis.
>
> Diseases of the arteries, credited with 1,956 deaths, shows 4,831 other deaths where diseases of the arteries was a contributory cause.
>
> In addition to the 650 deaths from puerperal causes, there were 94 deaths assigned to other causes where the puerperal condition was present.

From the detailed table (not published in this report) the following facts are of interest:

> Of the 247 deaths from measles, 158 were complicated with pneumonia.
>
> Of 1,100 deaths from diabetes, 177 were complicated with diseases of the cardiovascular system and 88 with nephritis and Bright's disease.
>
> Of 6,262 deaths from cerebral hemorrhage and apoplexy, 2,026 were complicated with arteriosclerosis, 358 with nephritis and Bright's disease, and 247 with senility.
>
> Of 4,168 deaths from pneumonia (all forms), 323 were complicated with organic heart disease, 157 with arteriosclerosis, and 141 with senility.
>
> Of the 1,965 deaths from diarrhea and enteritis (under 2 years), 17 were complicated with whooping cough, 36 with simple meningitis, 107 with infantile convulsions, 42 with bronchitis, 70 with pneumonia, and 42 with premature birth or injury at birth.

Of the 5,376 deaths from acute nephritis and Bright's disease, 12 were with influenza, 21 with anemia, 7 with alcoholism, 181 with cerebral hemorrhage and apoplexy, 1,316 with organic heart disease, 543 with arteriosclerosis, 79 with pneumonia, and 125 with senility.

There are other interesting and important facts to be noted in his table, too numerous to be mentioned here. However, this rief summary gives an insight into the classification of the joint auses of death.

ATE OF NEW YORK (exclusive of New York City) — *Secondary Causes of Death in Relation to Primary Causes for the Year 1921*

t. it .	CAUSE OF DEATH	NUMBER OF DEATHS WHERE CAUSE IS EDITED AS —		Number of deaths which had a contributory cause stated
		Primary	Secondary	
	ALL CAUSES	**65,853**	**26,469**	**26,469**
	I Epidemic, endemic and infectious diseases	**8,308**	**1,026**	**3,223**
	Typhoid fever	254	3	107
	Malaria	8	1	6
	Smallpox	1	....	1
	Measles	247	13	202
	Scarlet fever	281	....	141
	Whooping cough	406	27	313
	Diphtheria	811	22	242
	Influenza	394	188	290
	Mumps	12	2	11
	Cholera nostras	16	4	7
	Dysentery	55	23	24
	Leprosy	1	....	....
	Erysipelas	159	57	76
	Acute poliomyelitis	123	1	13
	Lethargic encephalitis	86	3	21
	Meningococcus meningitis	29	1	5
	)ther epidemic and endemic diseases	9	5	4
	nthrax	2	....	....
	abies	1	....	....
	'etanus	55	....	19
	Iycoses	3	....	....
	uberculosis of the respiratory system	4,183	27	1,261
	uberculosis of the meninges and central nervous system	247	109	50
	berculosis of the intestines and peritoneum	164	185	55
	berculosis of the vertebral column	51	17	30
	berculosis of the joints	27	13	12
	berculosis of other organs	89	45	38
	seminated tuberculosis	92	9	38
	hilis	396	1	228
	t chancre	1	1	1
	ococcus infection	9	....	4
	ulent infection, septicemia	96	268	24
	r infectious diseases	....	1	....
	eneral diseases **(not included above)**	**8,003**	**989**	**2,547**
	er and other malignant tumors of the buccal vity	204	2	42
	er and other malignant tumors of the stomach l liver	1,803	33	484
	r and other malignant tumors of the peritoneum, stines and rectum	866	21	354
	r and other malignant tumors of the female ital organs	867	6	202
	r and other malignant tumors of the breast	538	28	195
	r and other malignant tumors of the skin	176	45	57
	r and other malignant tumors of other or unified organs	1,046	25	318

STATE OF NEW YORK (exclusive of New York City) — *Secondary Causes of Death in Relation to Primary Causes for the Year 1921* — (Continued)

Int. List No.	CAUSE OF DEATH	NUMBER OF DEATHS WHERE CAUSE IS EDITED AS —		Number of deaths which had a contributory cause stated
		Primary	Secondary	
	II General diseases (not included above) — (Cont'd)			
50	Benign tumors and tumors not returned as malignant (tumors of the female genital organs excepted)	18	9	6
51	Acute rheumatic fever	247	120	194
52	Chronic rheumatism, osteoarthritis, gout	82	162	39
53	Scurvy	3	6	2
54	Pellagra	14	2	5
56	Rickets	24	39	7
57	Diabetes mellitus	1,100	75	513
58	Anemia, chlorosis	408	199	54
59	Diseases of the pituitary gland	3	....	2
60	Diseases of the thyroid gland	137	59	71
61	Diseases of the parathyroid glands	3	6	....
62	Diseases of the thymus gland	15	5	4
63	Diseases of the adrenals (Addison's disease)	34	1	11
64	Diseases of the spleen	9	8	7
65	Leukemia and Hodgkin's disease	109	8	34
66	Alcoholism (acute or chronic)	61	55	21
67	Chronic poisoning by mineral substances	6	1	6
68	Chronic poisoning by organic substances	9	11	3
69	Other general diseases	131	63	16
	III Diseases of the nervous system and of the organs of special sense	**8,491**	**2,737**	**4,348**
70	Encephalitis	71	62	21
71	Meningitis (does not include meningitis specified as meningococcic, tuberculous, rheumatic, etc.)	208	314	52
72	Tabes dorsalis (locomotor ataxia)	126	9	59
73	Other diseases of the spinal cord	315	52	144
74	Cerebral hemorrhage, apoplexy	6,262	821	3,535
75	Paralysis without specified cause	327	268	175
76	General paralysis of the insane	399	55	105
77	Other forms of mental alienation	88	397	10
78	Epilepsy	168	158	40
79	Convulsions (nonpuerperal) [5 years and over]	13	24	3
80	Infantile convulsions [under 5 years of age]	107	282	10
81	Chorea	5	15	1
82	Neuralgia and neuritis	25	51	9
83	Softening of the brain	68	43	35
84	Other diseases of the nervous system	155	116	37
85	Diseases of the eye and annexa	3	5	1
86	Diseases of the ear and of the mastoid process	151	65	111
	IV Diseases of the circulatory system	**13,637**	**9,682**	**6,915**
87	Pericarditis	62	69	35
88	Endocarditis and myocarditis (acute)	603	851	323
89	Angina pectoris	709	148	359
90	Other diseases of the heart	10,088	3,371	5,199
91	Diseases of the arteries	1,956	4,831	891
92	Embolism and thrombosis (not cerebral)	126	284	71
93	Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)	28	35	20
94	Diseases of the lymphatic system (lymphangitis, etc.)	48	27	12
95	Hemorrhage without specified cause	2	30	1
96	Other diseases of the circulatory system	15	36	4
	V Diseases of the respiratory system	**5,272**	**4,332**	**2,269**
97	Diseases of the nasal fossae and their annexa	6	17	....
98	Diseases of the larynx	40	56	11
99	Bronchitis	598	601	342
100	Bronchopneumonia (including capillary bronchitis)	1,879	1,091	701
101	Pneumonia	2,280	400	982
102	Pleurisy	181	237	107
103	Congestion and hemorrhagic infarct of the lung	103	1,521	46
104	Gangrene of the lung	16	7	10
105	Asthma	76	177	45
106	Pulmonary emphysema	14	33	2
107	Other diseases of the respiratory system (tuberculosis excepted)	70	192	23

E OF NEW YORK (Exclusive of New York City) — *Secondary Causes of Death in Relation to Primary Causes for the Year 1921* — (Continued)

CAUSE OF DEATH	NUMBER OF DEATHS WHERE CAUSE IS EDITED AS —		Number of deaths which had a contributory cause stated
	Primary	Secondary	
VI Diseases of the digestive system	**5,563**	**2,245**	**2,192**
Diseases of the mouth and annexa	40	38	20
Diseases of the pharynx and tonsils	195	85	111
Diseases of the esophagus	15	8	5
Ulcer of the stomach and duodenum	242	52	109
Other diseases of the stomach (cancer excepted)	382	408	137
Diarrhea and enteritis (under 2 years of age)	1,965	58	506
Diarrhea and enteritis (2 years and over)	496	360	173
Ankylostomiasis	....	2	....
Diseases due to other intestinal parasites	2	2	1
Appendicitis and typhlitis	644	13	412
Hernia, intestinal obstruction	575	268	240
Other diseases of the intestines	75	113	32
Acute yellow atrophy of the liver	23	6	11
Hydatid tumor of the liver	1	....	1
Cirrhosis of the liver	394	57	190
Biliary calculi	158	61	87
Other diseases of the liver	222	221	105
Diseases of the pancreas	34	11	9
Peritonitis without specified cause	95	478	30
Other diseases of the digestive system (cancer and tuberculosis excepted)	5	4	4
VII Non-venereal diseases of the genitourinary system and annexa	**6,129**	**2,249**	**3,627**
Acute nephritis (including unspecified under 10 years of age)	390	383	154
Chronic nephritis (including unspecified 10 years and over)	4,986	1,248	3,061
Chyluria	....	....	....
Other diseases of the kidney and annexa (diseases of the kidneys in pregnancy excepted)	174	112	99
Calculi of the urinary passages	36	7	17
Diseases of the bladder	81	190	40
Diseases of the urethra, urinary abscess, etc	11	10	3
Diseases of the prostate	182	195	107
Nonvenereal diseases of the male genital organs	7	6	3
Cysts and other benign tumors of the ovary	43	16	23
Salpingitis and pelvic abscess	95	35	62
Benign tumors of the uterus	86	31	43
Nonpuerperal uterine hemorrhage	4	4	1
Other diseases of the female genital organs	32	11	13
Nonpuerperal diseases of the breast (cancer excepted)	2	1	1
VIII The puerperal state	**650**	**94**	**198**
Accidents of pregnancy	61	52	24
Puerperal hemorrhage	82	2	14
Other accidents of labor	70	22	28
Puerperal septicemia	241	9	81
Puerperal phlegmasia alba dolens, embolus, sudden death	29	2	5
Puerperal albuminuria and convulsions	165	7	46
Following childbirth (not otherwise defined)	2	....	....
Puerperal diseases of the breast	....	....	....
IX Diseases of the skin and of the cellular tissue	**232**	**430**	**94**
Gangrene	89	260	30
Furuncle	46	33	24
Acute abscess	58	71	27
Other diseases of the skin and annexa	39	66	13
X Diseases of the bones and of the organs of locomotion	**101**	**77**	**62**
Diseases of the bones (tuberculosis excepted)	88	28	56
Diseases of the joints (tuberculosis and rheumatism excepted)	10	35	5
Amputations	1	2	....
Other diseases of the organs of locomotion	2	12	1

STATE OF NEW YORK (Exclusive of New York City) — *Secondary Causes of Death*
Relation to Primary Causes for the Year 1921 — (Continued)

Int. List No.	CAUSE OF DEATH	Number of Deaths Where Cause is Edited as —		Numbe of deatl which h a contrit tory cau stated
		Primary	Secondary	
	XI Malformations	**832**	**29**	**1**
159	Congenital malformations(stillbirths not included)	832	29	1
	XII Early infancy	**3,560**	**334**	**1**
160	Congenital debility, icterus, and sclerema	493	142	
161	Premature birth; injury at birth	2,803	135	1
162	Other diseases peculiar to early infancy	258	57	
163	Lack of care	6	....	....
	XIII Old age	**485**	**2,022**	
164	Senility	485	2,022	
	XIV External causes	**4,513**	**135**	**6**
165	Suicide by solid or liquid poisons (corrosive substances excepted)	36	....	
166	Suicide by corrosive substances	64	....	
167	Suicide by poisonous gas	57	....	
168	Suicide by hanging or strangulation	171	....	
169	Suicide by drowning	54	1	
170	Suicide by firearms	163	....	
171	Suicide by cutting or piercing instruments	44	....	
172	Suicide by jumping from high places	15	....	....
173	Suicide by crushing	3	....	....
174	Other suicides	4	....	
175	Poisoning by food	34	1	
176	Poisoning by venomous animals	6	....	
177	Other acute accidental poisonings (gas excepted)	77	....	
178	Conflagration	41	1	
179	Accidental burns (conflagration excepted)	289	3	
180	Accidental mechanical suffocation	66	....	
181	Accidental absorption of irrespirable or poisonous gas	93	3	
182	Accidental drowning	503	1	
183	Accidental traumatism by firearms (wounds of war excepted)	77	31	
184	Accidental traumatism by cutting or piercing instruments	20	....	
185	Accidental traumatism by fall	771	....	4
186	Accidental traumatism in mines and quarries	13	1	....
187	Accidental traumatism by machines	75	4	
188	Accidental traumatism by other crushing (vehicles, railways, landslides, etc)	1,326	6	
189	Injuries by animals (not poisoning)	30	1	
190	Wounds of war	....	1	....
191	Execution of civilians by belligerent armies	....	....	......
192	Starvation (deprivation of food or water)	3	....	....
193	Excessive cold	14	3	
194	Excessive heat	69	53	
195	Lightning	14	....	
196	Other accidental electric shocks	45	2	
197	Homicide by firearms	110	....	
198	Homicide by cutting or piercing instruments	19	....	
199	Homicide by other means	39	....	
200	Infanticide (murder of infants of less than one year of age)	30	....	....
201	Fracture (cause not specified)	20	1	
202	Other external violence (cause specified)	81	13	
203	Other external violence (cause not specified)	37	9	
	XV Ill-defined diseases	**77**	**88**	
204	Sudden death	9	2	....
205	Cause of death not specified or ill-defined	68	86	

CERTAIN AGES AND FROM IMPORTANT CAUSES: 1921 COMPARED WITH 1920 AND WITH THE AVERAGE FOR THE QUINQUENNIUM 1916-1920

ND CAUSE F DEATH	1921		1920		ANNUAL AVERAGE, 1916-1920		INCREASE OR DECREASE 1921 FROM 1916-1920		Per cent of change of rate 1921 from 1916-20	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Increase	Decrease
l population† . . .	10,543,105	.....	10,437,796	.....	10,226,936	.....	+316,169	+ 3.1	.....	....
hs (stillbirths ex-	240,210	22.8	235,460	22.6	238,341	23 3	+ 1,869	− 0.5	.....	2.1
ths, all causes irths excluded) .	130,110	12.3	144,466	13.8	157,171	15.4	− 27,061	− 3.1	.....	20.1
years	25,021	237.3	29,584	283.4	31,821	311 1	− 6,800	− 73.8	.....	23.7
r 1 year	18,070	75.0	20,326	86.0	21,606	91 0	− 3,536	− 16.0	.....	17.6
ears	6,951	65.9	9,258	88.7	10,215	99.9	− 3,264	− 34.0	.....	34.0
ars	65,103	617.5	72,804	697.5	83,473	816.2	− 18,370	−198.7	.....	24.3
and over	39,950	378.9	42,009	402.5	41,813	408 9	− 1,863	− 30.0	.....	7.3
n ages	36	.....	69	.....	64	.....	− 28	.....	.....	....
ever‡	377	3.6	371	3.6	503	4 9	− 126	− 1.3	.....	26.5
. . . .	412	3.9	1,101	10.5	914	8.9	− 502	− 5.0	.....	56.2
er	666	6.3	450	4.3	290	2.8	+ 376	+ 3.5	125.0	....
cough	756	7.2	1,007	9.6	836	8.2	− 80	− 1 0	.....	12.2
a	1,702	16.1	1,904	18.2	1,803	17.6	− 101	− 1.5	.....	8.5
inal meningitis.	249	2.4	190	1.8	307	3.0	− 58	− 0.6	.....	20.0
terior poliomy-	266	2.5	50	.....	717	7.0	− 451	− 4.5	.....	64.3
. . . .	778	7.4	5,890	56.4	8,880	86.8	− 8,102	− 79.4	.....	91.5
sis (all forms) . . .	10,775	102.2	12,543	120.2	15,289	149.5	− 4,514	− 47.3	.....	31.6
ary tuberculo-	9,407	89.2	11,030	105.7	13,552	132.5	− 4,145	− 43.3	.....	32.7
lous meningitis.	630	6.0	814	7.8	1,005	9.8	− 375	− 3.8	.....	38.8
rms	738	7.0	699	6.7	732	7.2	+ 6	− 0.2	.....	2.8
l forms)	11,163	105 9	10,539	101.0	9,947	97 3	+ 1,216	+ 8 6	8 8	....
. . . .	2,220	21.1	2,188	21.0	2,134	20.9	+ 86	+ 0 2	1.0	....
emorrhage, apo-	7,148	67.8	6,852	65.6	6,755	66.1	+ 393	+ 1.7	2.6	....
eart disease and ditis	23,090	219.0	22,657	217.1	22,244	217.5	+ 846	+ 1.5	0.7	....
rosis	4,655	44.2	4,883	46.8	4,695	45.9	− 40	− 1.7	.....	3.7
. . . .	1,145	10.9	1,759	16.9	1,760	17.2	− 615	− 6.3	.....	36.6
a	10,645	101.0	16,475	157.8	20,814	203.5	− 10,169	−102.5	.....	50.4
pneumonia	4,779	45.4	7,568	72.5	7,812	76 4	− 3,033	− 31.0	.....	40.6
pneumonia and lified	5,866	55.6	8,907	85.3	13,002	127.1	− 7,136	− 71.5	.....	56.3
and enteritis 2 years)	3,952	37.5	4,662	44.7	4,997	48.9	− 1,045	− 11.4	.....	23.3
tis	1,468	13.9	1,406	13.5	1,239	12.1	+ 229	+ 1.8	14.9	....
testinal obstruc-	1,226	11.6	1,214	11.6	1,261	12.3	− 35	− 0.7	.....	5.7
f the liver	729	6.9	779	7.5	1,070	10.5	− 341	− 3.6	.....	34.3
and Bright's	9,481	89.9	10,481	100.4	11,655	114.0	− 2,174	− 24.1	.....	21.1
f the puerperal	1,396	13.2	1,424	13.6	1,365	13.3	+ 31	− 0.1	.....	0.8
al septicemia . . .	412	3.9	384	3.7	409	4.0	+ 3	− 0.1	.....	2.5
l debility and ations	6,959	66.0	7,115	68.2	7,579	74.1	− 620	− 8 1	.....	10.9
. . . .	708	6.7	838	8.0	887	8.7	+ 179	− 2.0	.....	23.0
. . . .	7,187	68.2	7,351	70.4	8,140	79 6	− 953	− 11.4	.....	14.3
bile accidents . . .	1,620	15.5	1,439	13.8	1,180	11 5	+ 449	+ 4 0	34.8	....
ng	869	8.2	726	7.0	920	9.0	− 51	− 0 8	.....	8.9
. . . .	1,442	13.7	1,189	11.4	1,314	13 1	+ 98	+ 0 6	4 6	....
s	501	4 8	448	4 3	418	4 1	+ 83	+ 0.7	17.1	....
causes	19,014	180.3	18,700	179.2	19,328	189 0	− 314	− 8 7	.....	4.6

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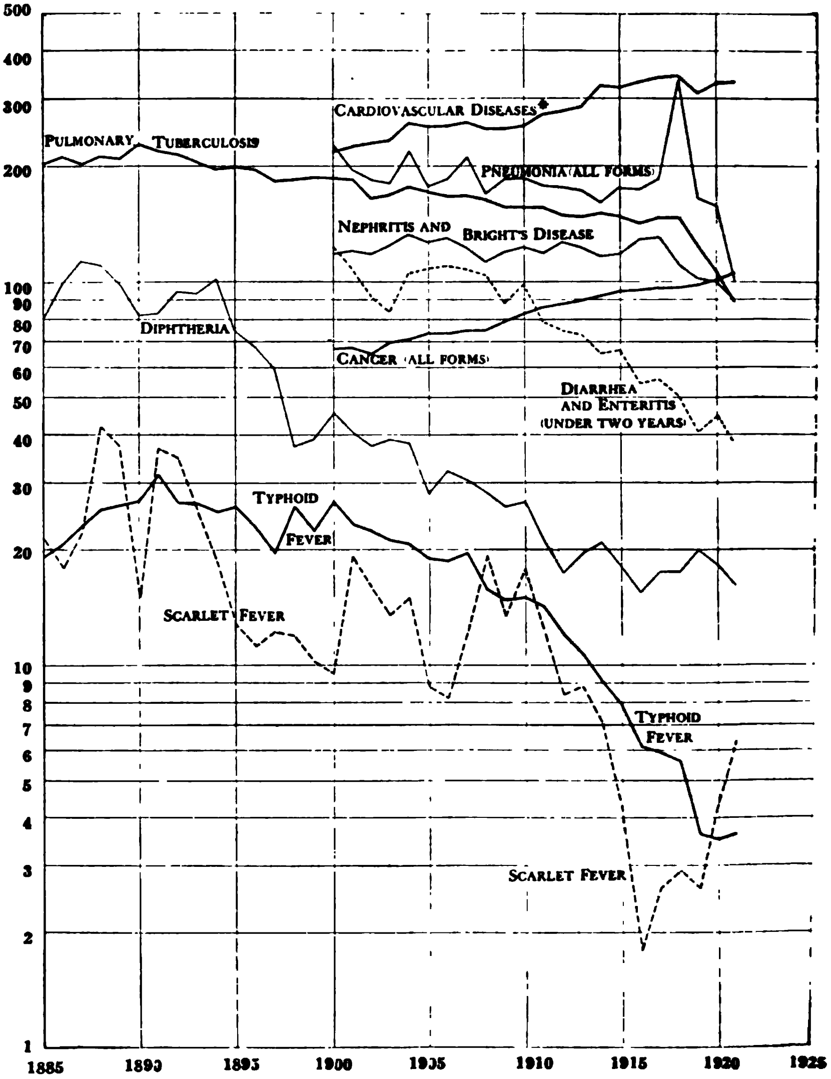
and deaths per 1,000 population; deaths under 1 year per 1,000 living births (infant leaths for all other ages and by causes per 100,000 population.

stimated on the basis of the increase between the U. S. censuses of 1910 and 1920 (comhmetic method) for New York City and the State Enumeration of 1915 and the United 1920 for the rest of State.

rs to the left of each title are those of the International List of Causes of Death (Revision

acute miliary tuberculosis (37c) for New York City not included — not available.

MOVEMENT OF DEATH RATES FOR 100,000 POPULATION FROM IMPORTANT CAUSES, ENTIRE STATE OF NEW YORK



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* This title includes Cerebral Hemorrhage, Apoplexy, Organic heart disease, Endocarditis, and Arteriosclerosis.

STATISTICAL TABLES

NG AND ANALYZING THE RESULTS OF REGISTRATION OF , DEATHS AND MARRIAGES IN THE STATE OF NEW YORK TS SUBDIVISIONS DURING THE YEAR 1921, WITH COM- VE DATA FOR PREVIOUS YEARS*

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to 1914 the original certificates of births and deaths were not filed
State Department of Health from the cities of New York, Albany,
d Yonkers, the data for those cities included in the reports of the
rtment being based upon the compilations prepared monthly by
tive local registers of these cities.

g January 1, 1914, the State Department of Health has been
he original certificates of births and deaths from all cities, towns
es in the State, excepting only New York City. Unless otherwise
therefore, the compilations presented in the monthly bulletins and
orts of the Department since 1914 are based upon the data given
ginal certificates, except for New York City, the figures for which
ed monthly by the Registrar of Records of the New York City
t of Health.

Table 1 — STATE OF NEW YORK: *Population, annual number of births,*
marriages, with rates per 1,000 *population:* 1885–1921

YEAR	Population[1] estimated as of July 1	Births (exclusive of stillbirths)	Deaths (exclusive of stillbirths)	Marriages	RATE per 1,000 po	
					Births	Death
1885	5,550,690	63,536	80,407	24,409	11.4	14.
1886	5,642,720	89,828	86,801	36,764	15.9	15.
1887	5,734,751	102,038	108,269	44,438	17.8	18.
1888	5,826,782	103,089	114,584	43,683	17.7	19.
1889	5,918,813	114,804	113,155	50,960	19.4	19.
1890	6,013,722	112,572	128,648	41,195	18.7	21.
1891	6,140,294	125,909	129,850	51,458	20.5	21.
1892	6,266,866	130,143	131,388	52,725	20.8	21.
1893	6,393,438	136,297	129,659	52,805	21.3	20.
1894	6,520,010	141,827	123,423	52,539	21.8	18.
1895	6,646,582	142,311	128,834	59,059	21.4	19.
1896	6,773,154	147,327	126,253	58,990	21.8	18.
1897	6,899,726	144,631	118,525	57,530	21.0	17.
1898	7,026,298	138,702	122,584	57,392	19.7	17.
1899	7,152,870	136,778	121,831	61,167	19.1	17.
1900	7,284,461	143,156	132,089	63,225	19.7	18.
1901	7,471,268	140,539	131,335	65,216	18.8	17.
1902	7,658,075	146,740	124,830	68,903	19.2	16.
1903	7,844,882	158,343	127,498	73,011	20.2	16.
1904	8,031,689	165,014	142,217	74,677	20.5	17.
1905	8,218,496	172,259	137,435	78,261	21.0	16.
1906	8,405,303	183,012	141,099	87,870	21.8	16.
1907	8,592,110	196,020	147,130	92,421	22.8	17.
1908	8,778,917	203,159	138,912	73,644	23.1	15.
1909	8,965,724	202,656	140,261	80,090	22.6	15.
1910	9,140,263	213,235	147,710	85,490	23.3	16.
1911	9,294,341	221,678	145,912	86,463	23.9	15.
1912	9,448,418	227,120	142,377	97,427	24.0	15.
1913	9,602,495	228,713	145,274	92,343	23.8	15.
1914	9,756,572	240,038	145,476	93,793	24.6	14.
1915	9,910,650	242,950	146,892	91,102	24.5	14.
1916	10,016,078	240,817	151,543	97,474	24.0	15.
1917	10,121,507	246,453	154,127	104,800	24.3	15.
1918	10,226,935	242,704	192,318[2]	94,107	23.7	18.
1919	10,332,364	226,269	143,401	103,715	21.9	13.
1920	10,437,796	235,460	144,466	111,280	22.6	13.
1921	10,543,105	240,210	130,110	101,437	22.8	12.

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[1] Estimates of population 1885–1909 were supplied by the United States Bureau of th
Estimates of population 1910–1921 have been revised on the basis of the U. S.
1910 and 1920 for New York City, and the U. S. Censuses of 1910 and 1920 and the Sta
ation of 1915 for the rest of the state.

[2] Civilian deaths only, except for New York City.

Table 2 — NEW YORK CITY and REST OF STATE: *Population, deaths and death rates per 1,000 population:* 1898–1921

YEAR	NEW YORK CITY[1]			REST OF STATE		
	Population estimated as of July 1[2]	Deaths (exclusive of stillbirths)		Population estimated as of July 1[2]	Deaths (exclusive of stillbirths)	
		Number	Rate[3]		Number	Rate[3]
1898	3,256,149	66,330	20.4	3,770,149	56,254	14.9
1899	3,350,611	65,347	19.5	3,802,259	56,484	14.9
1900	3,448,423	70,870	20.6	3,836,038	61,219	16.0
1901	3,583,074	70,722	19.7	3,888,194	60,613	15.6
1902	3,717,725	68,131	18.3	3,940,350	56,699	14.4
1903	3,852,376	67,808	17.6	3,992,506	59,690	15.0
1904	3,987,027	78,043	19.6	4,044,662	64,174	15.9
1905	4,121,678	73,714	17.9	4,096,818	63,721	15.6
1906	4,256,329	76,203	17.9	4,148,974	64,896	15.6
1907	4,390,980	79,205	18.0	4,201,130	67,925	16.2
1908	4,525,631	73,075	16.1	4,253,286	65,837	15.5
1909	4,660,283	74,105	15.9	4,305,441	66,156	15.4
1910	4,785,191	76,750	16.0	4,355,072	70,960	16.3
1911	4,873,071	75,423	15.5	4,421,270	70,489	15.9
1912	4,960,951	73,019	14.7	4,487,467	69,358	15.5
1913	5,048,830	73,903	14.6	4,553,665	71,371	15.7
1914	5,136,710	74,803	14.6	4,619,862	70,673	15.3
1915	5,224,590	76,193	14.6	4,686,060	70,699	15.1
1916	5,312,469	77,800	14.6	4,703,609	73,743	15.7
1917	5,400,349	78,575	14.5	4,721,158	75,552	16.0
1918	5,488,228	98,119	17.9	4,738,707	94,199[4]	19.9
1919	5,576,108	74,433	13.3	4,756,256	68,968	14.5
1920	5,663,988	73,249	12.9	4,773,808	71,217	14.9
1921	5,751,859	64,257	11.2	4,791,246	65,853	13.7

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[1] Previous to 1910, the local figures for New York City differ somewhat from the state figures here given, but the divergences in rate are slight.

[2] Estimates of population 1885–1909 were supplied by the United States Bureau of the Census. Estimates of population 1910–1921 have been revised on the basis of the U. S. Censuses of 1910 and 1920 for New York City, and the U. S. Censuses of 1910 and 1920 and the State Enumeration of 1915 for the rest of the state.

[3] Crude rates taking no account of the more favorable age constitution of New York City. For standardized rates see discussion in report for 1915, pages 312–316, 552–561, and accompanying charts, also page 3 of this report.

[4] Civilian deaths only.

Table 3 — STATE OF NEW YORK: *Number and per cent of deaths under* 1 *year* *under* 5 *years of age:* 1885–1921

YEAR	ALL BIRTHS (exclusive of stillbirths)	ALL DEATHS (exclusive of stillbirths)	DEATHS OF INFANTS UNDER 1 YEAR[1]			DEATHS OF CHIL UNDER 5 YEA	
			Total	Per 1,000 births[2]	Per cent of total deaths	Total	Per of t dea
1885.............	63,536	80,407	....	......	......	30,027	
1886.............	89,828	86,801	....	......	......	32,928	
1887.............	102,038	108,269	....	......	......	35,114	
1888.............	103,089	114,584	....	......	......	38,345	
1889.............	114,804	113,155	....	......	......	40,243	
1890.............	112,572	128,648	....	......	......	37,392	
1891.............	125,909	129,850	....	......	......	42,740	
1892.............	130,143	131,388	....	......	......	42,434	
1893.............	136,297	129,659	....	......	......	41,643	
1894.............	141,827	123,423	....	......	......	41,472	
1895.............	142,311	128,834	....	......	......	42,002	
1896.............	147,327	126,253	....	......	......	40,136	
1897.............	144,631	118,525	....	......	......	35,771	
1898.............	138,702	122,584	....	......	......	37,113	
1899.............	136,778	121,831	....	......	......	35,386	
1900.............	143,156	132,089	....	......	......	39,204	
1901.............	140,539	131,335	....	......	......	35,775	
1902.............	146,740	124,830	....	......	......	31,215	
1903.............	158,343	127,498	....	......	......	32,768	
1904.............	165,014	142,217	24,909	151	17.5	39,036	
1905.............	172,259	137,435	25,827	150	18.8	38,045	
1906.............	183,012	141,099	25,114	148	19.2	39,290	
1907.............	196,020	147,130	28,011	143	19.0	40,168	
1908.............	203,159	138,912	26,561	131	19.1	37,941	
1909.............	202,656	140,261	26,077	129	18.6	38,278	
1910.............	213,235	147,710	27,534	129	18.6	39,848	
1911.............	221,678	145,912	25,316	114	17.3	36,156	
1912.............	227,120	142,377	24,681	109	17.3	34,787	
1913.............	228,713	145,274	25,014	109	17.2	35,596	
1914.............	240,038	145,476	23,731	99	16.3	33,082	
1915.............	242,950	146,892	24,079	99	16.4	33,584	
1916.............	240,817	151,543	22,731	94	15.0	33,618	
1917.............	246,453	154,127	22,473	91	14.6	31,428	
1918.............	242,704	[3] 192,318	23,524	97	12.2	37,429	
1919.............	226,269	143,401	18,976	84	13.2	27,048	
1920.............	235,460	144,466	20,326	86	14.1	29,584	
1921.............	240,210	130,110	18,070	75	13.9	25,021	

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[1] Deaths of infants under 1 year of age were not compiled separately until 1904.

[2] Incomplete birth registration in the State's area, exclusive of New York City, contribute the high infant mortality previous to 1914.

[3] Civilian deaths only, except for New York City.

le 4 — NEW YORK CITY and REST OF STATE: *Births and birth rates per* 1,000 *pulation; deaths under* 1 *year of age with rates per* 1,000 *living births; and deaths der* 5 *years of age:* 1905–1921

YEAR	BIRTHS (exclusive of stillbirths)		DEATHS (exclusive of stillbirths)		
			UNDER 1 YEAR		UNDER 5 YEARS
	ALL BIRTHS	Rate per 1,000 population	Number	Per 1,000 births	Number
York City	103,881	25.2	16,435	158	24,539
of State	68,378	16.7	9,392	137	13,506
York City	111,773	26.2	17,165	154	25,752
of State	71,239	17.2	9,949	140	13,538
York City	120,716	27.5	17,513	145	25,812
of State	75,304	17.9	10,498	139	14,356
York City	126,862	28.0	16,211	128	24,134
of State	76,297	17.9	10,350	136	13,807
York City	122,367	26.3	15,944	130	24,496
of State	80,289	18.6	10,133	126	13,782
York City	129,081	27.0	16,202	126	24,278
of State	84,154	19.3	11,332	135	15,570
York City	134,541	27.6	15,016	112	22,233
of State	87,137	19.7	10,300	118	13,923
York City	135,581	27.3	14,266	105	20,984
of State	91,539	20.4	10,415	114	13,803
York City	135,123	26.8	13,782	102	20,715
of State	93,590	20.6	11,262	120	14,881
York City	140,528	27.4	13,295	95	19,531
of State	99,510	21.5	10,436	105	13,551
York City	141,354	27.1	13,865	98	20,290
of State	101,596	21.7	10,214	101	13,294
York City	137,287	25.8	12,819	93	19,967
of State	103,530	22.0	9,912	96	13,651
York City	141,564	26.2	12,565	89	18,262
of State	104,889	22.2	9,908	94	13,166
York City	138,046	25.2	12,657	92	21,019
of State	104,658	22.1	10,867	104	16,410
York City	130,377	23.4	10,639	82	15,744
of State	95,892	20.2	8,337	87	11,304
York City	132,856	23.5	11,340	85	17,288
of State	102,604	21.5	8,986	88	12,296
York City	134,241	23.3	9,548	71	13,672
of State	105,969	22.1	8,522	80	11,349

E: Prior to 1914, incomplete registration of births in the State's area, exclusive of New City, contributes to the low birth rates and the high infant mortality.

Table 5 — STATE OF NEW YORK: *Deaths and death*

(In the absence of State data previous to 1907, U. S. Ce

YEAR	PNEUMONIA (ALL FORMS) (100, 101)		APOPLEXY (CEREBRAL HEMORRHAGE) (74)		ORGANIC HEART DISEASE AND ENDOCARDITIS (88, 90)		DISEASES OF THE ARTERIES, ARTERIO-SCLEROSIS, ETC. (91)		SUMMARY DISEASES THE CAR VASCUL. SYSTE (74, 88, 90
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number
1900.....	15,696	215.5	5,831	80.0	9,657	132.6	369	5.1	15,857
1901.....	14,660	196.2	6,008	80.4	10,282	137.6	444	5.9	16,734
1902.....	14,085	183.9	6,083	79.4	10,894	142.3	604	7.9	17,581
1903.....	14,213	181.2	6,082	77.5	11,447	145.9	738	9.4	18,267
1904.....	17,402	216.7	6,633	82.6	13,274	165.3	897	11.2	20,804
1905.....	14,581	177.4	6,736	82.0	12,996	158.1	1,042	12.7	20,774
1906.....	15,519	184.6	6,645	79.1	13,584	161.6	1,165	13.9	21,394
1907.....	18,104	210.7	7,135	83.0	13,924	162.1	1,338	15.6	22,397
1908.....	14,852	169.2	6,198	70.6	13,624	155.2	2,118	24.1	21,940
1909.....	16,597	185.1	5,239	58.4	14,029	156.5	3,134	35.0	22,402
1910.....	17,115	187.2	5,556	60.8	14,380	157.3	3,363	36.8	23,299
1911.....	16,460	177.1	5,766	62.0	15,346	165.1	4,178	45.0	25,290
1912.....	16,537	175.0	5,863	62.1	15,807	167.3	4,392	46.5	26,062
1913.....	16,530	172.1	5,776	60.2	16,716	174.1	4,779	49.8	27,271
1914.....	15,510	159.0	6,716	68.8	20,682	212.0	3,956	40.5	31,354
1915.....	17,209	173.6	6,423	64.8	21,046	212.4	3,984	40.2	31,453
1916.....	17,314	172.9	6,471	64.6	21,837	218.0	4,466	44.6	32,774
1917.....	18,673	184.5	6,796	67.1	22,626	223.5	4,825	47.7	34,247
1918 [3]....	34,513	337.5	7,019	68.6	23,456	229.4	4,616	45.1	35,091
1919.....	17,096	165.5	6,638	64.2	20,644	199.8	4,685	45.3	31,967
1920.....	16,475	157.8	6,852	65.6	22,657	217.1	4,883	46.8	34,392
1921.....	10,645	101.0	7,148	67.8	23,090	219.0	4,655	44.2	34,893

[1] For estimates of population, see Table 1, page 22.
[2] See Table 6, page 28.
[3] Civilian deaths only, except for New York City.

population[1] *from important causes:* **1900–1921**

d for all causes listed, except cancer.)

	CANCER[2]		SUICIDES		VIOLENT DEATHS (SUICIDE EXCLUDED)		DIARRHEA AND ENTERITIS (UNDER 2 YEARS)	
	43–49		164–174		175–203		113	
Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
118.4	4,871	66.9	858	11.8	5,707	78.3	8,969	123.1
120.5	5,033	67.4	806	10.8	7,223	96.7	8,053	107.8
118.0	4,990	65.2	894	11.7	6,138	80.2	7,016	91.6
123.9	5,456	69.5	938	12.0	6,905	88.0	6,558	83.6
132.9	5,697	70.9	1,031	12.8	8,110	101.0	8,417	104.8
126.7	6,056	73.7	1,219	14.8	7,379	89.8	8,914	108.5
130.0	6,168	73.4	1,188	14.1	7,948	94.6	9,249	110.0
123.1	6,420	74.7	1,207	14.0	8,065	98.9	9,213	107.2
112.6	6,554	74.7	1,511	17.2	7,300	83.2	9,111	103.8
119.6	7,060	78.7	1,494	16.7	7,240	80.8	7,873	87.8
122.7	7,522	82.3	1,479	16.2	7,840	85.8	9,036	98.9
118.4	7,970	85.8	1,436	15.5	8,661	93.2	7,301	78.6
125.9	8,250	87.3	1,340	14.2	8,121	86.0	7,035	74.5
122.2	8,536	88.9	1,476	15.4	8,425	87.7	6,964	72.5
115.9	8,906	91.3	1,516	15.5	8,134	83.4	6,287	64.4
116.9	9,301	93.8	1,680	17.0	7,826	79.0	6,510	65.7
127.8	9,419	94.0	1,492	14.9	8,599	85.9	5,387	53.8
129.8	9,736	96.2	1,441	14.2	9,700	95.8	5,624	55.6
110.6	9,876	96.6	1,302	12.7	8,833	86.4	5,122	50.1
102.0	10,166	98.4	1,294	12.5	7,863	76.1	4,191	40.6
100.4	10,539	101.0	1,189	11.4	7,799	74.7	4.662	44.7
89.9	11,163	105.9	1,442	13.7	7,688	72.9	3,952	37.5

Table 6 — STATE OF NEW YORK: *Deaths and death rates per* 100,000 p

YEAR	TOTAL DEATHS — ALL FORMS (43–49)		DEATHS FROM C		
			BUCCAL CAVITY (43)		STOMAC LIV (4
	Number	Rate	Number	Rate	Number
1907	6,420	74.7	206	2.4	2,396
1908	6,554	74.7	170	1.9	2,567
1909	7,060	78.7	267	3.0	2,677
1910	7,522	82.3	285	3.1	2,933
1911	7,970	85.8	310	3.3	2,987
1912	8,250	87.3	290	3.1	3,071
1913	8,536	88.9	291	3.0	3,228
1914	8,906	91.3	320	3.3	3,333
1915	9,301	93.8	324	3.3	3,482
1916	9,419	94.0	321	3.2	3,518
1917	9,736	96.2	327	3.2	3,629
1918 [2]	9,876	96.6	346	3.4	3,675
1919	10,166	98.4	354	3.4	3,700
1920	10,539	101.0	365	3.5	3,841
1921	11,163	105.9	385	3.7	3,998

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[1] For estimates of population, see Table 1, page 22.
[2] Civilian deaths only, except for New York City.

and other malignant tumors, by seat of disease: 1907–1921

NANT TUMORS OF —								
M, S,	FEMALE GENITAL ORGANS (46)		BREAST (47)		SKIN (48)		OTHER ORGANS OR OF ORGANS NOT SPECIFIED (49)	
Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
9.5	946	11.0	617	7.2	201	2.3	1,242	14.5
9.7	1,046	11.9	602	6.9	200	2.3	1,117	12.7
10.3	1,146	12.8	665	7.4	202	2.2	1,177	13.1
12.3	1,096	12.0	732	8.0	192	2.1	1,163	12.7
11.9	1,202	12.9	787	8.5	215	2.3	1,360	14.6
12.8	1,209	12.8	750	7.9	257	2.7	1,460	15.5
13.2	1,260	13.1	810	8.4	213	2.2	1,471	15.3
13.4	1,223	12.5	916	9.4	215	2.2	1,589	16.3
14.2	1,326	13.4	877	8.8	222	2.2	1,661	16.8
14.1	1,281	12.8	971	9.7	248	2.5	1,669	16.7
14.6	1,297	12.8	975	9.6	240	2.4	1,788	17.7
15.0	1,334	13.0	954	9.3	225	2.2	1.807	17.7
14.4	1,498	14.5	940	9.1	237	2.3	1,947	18.8
15.0	1,407	13.5	1,026	9.8	241	2.3	2,090	20.0
16.8	1,538	14.6	1,040	9.9	250	2.4	2,180	20.7

Table 7 — STATE OF NEW YORK, NEW YORK CITY, and REST OF STATE: *Deaths and death rates per* 100,000 *population*[1] *from tuberculosis, typhoid fever, measles, scarlet fever, whooping cough and diphtheria:* 1885–1921

YEAR	DEATHS FROM —																	
	PULMONARY TUBERCULOSIS (31, 37c)						TYPHOID FEVER (1)						MEASLES (7)					
	NEW YORK STATE		NEW YORK CITY		REST OF STATE		NEW YORK STATE		NEW YORK CITY		REST OF STATE		NEW YORK STATE		NEW YORK CITY		REST OF STATE	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1885	11,238	202.5	......	.....	......	.....	1,067	19.2	......	.....	......	.....	1,170	21.1	......	.....	......	......
1886	11,947	211.7	......	.....	......	.....	1,169	20.7	......	.....	......	.....	895	15.9	......	.....	......	......
1887	11,609	202.4	......	.....	......	.....	1,327	23.1	......	.....	......	.....	1,205	21.0	......	.....	......	......
1888	12,383	212.5	......	.....	......	.....	1,483	25.5	......	.....	......	.....	944	16.2	......	.....	......	......
1889	12,390	209.3	......	.....	......	.....	1,550	26.2	......	.....	......	.....	899	15.2	......	.....	......	......
1890	13,731	228.3	......	.....	......	.....	1,612	26.8	......	.....	......	.....	1,161	19.3	......	.....	......	......
1891	13,445	219.0	......	.....	......	.....	1,926	31.4	......	.....	......	.....	1,200	19.5	......	.....	......	......
1892	13,471	215.0	......	.....	......	.....	1,664	26.6	......	.....	......	.....	1,350	21.5	......	.....	......	......
1893	13,123	205.3	......	.....	......	.....	1,685	26.4	......	.....	......	.....	789	12.3	......	.....	......	......
1894	12,824	196.7	......	.....	......	.....	1,640	25.2	......	.....	......	.....	900	13.8	......	.....	......	......
1895	13,267	199.6	......	.....	......	.....	1,716	25.8	......	.....	......	.....	1,266	19.0	......	.....	......	......
1896	13,265	195.8	......	.....	......	.....	1,542	22.8	......	.....	......	.....	1,435	22.1	......	.....	......	......
1897	12,641	183.2	......	.....	......	.....	1,351	19.6	......	.....	......	.....	873	12.7	......	.....	......	......
1898	12,979	184.7	7,718	237.0	5,261	139.5	1,810	25.8	688	21.1	1,122	29.8	838	11.9	641	19.7	197	5.2
1899	13,412	187.5	8,046	240.1	5,366	141.1	1,604	22.4	546	16.3	1,058	27.8	756	10.6	589	17.6	167	4.4
1900	13,590	186.6	8,162	236.7	5,428	141.5	1,948	26.7	718	20.8	1,230	32.1	1,333	18.3	816	23.7	517	13.5
1901	13,766	184.3	8,141	227.2	5,625	144.7	1,741	23.3	727	20.3	1,014	26.1	859	11.5	444	12.4	415	10.7
1902	12,582	164.3	7,589	204.1	4,993	126.7	1,718	22.4	762	20.5	956	24.3	929	12.1	710	19.1	219	5.6
1903	13,194	168.2	7,990	207.4	5,204	130.3	1,665	21.2	634	16.5	1,031	25.8	721	9.2	506	13.1	215	5.4
1904	14,159	176.3	8,516	213.6	5,643	139.5	1,652	20.6	659	16.5	993	24.6	1,170	14.6	880	22.1	290	7.2
1905	14,061	171.1	8,528	206.9	5,533	135.1	1,554	18.9	635	15.4	919	22.4	988	12.0	517	12.5	471	11.5
1906	14,027	166.9	8,976	210.9	5,051	121.7	1,568	18.7	639	15.0	929	22.4	1,369	16.3	1,147	26.9	222	5.4
1907	14,431	168.0	8,996	204.9	5,435	120.4	1,673	19.5	740	16.9	933	22.2	997	11.6	728	16.6	269	6.4
1908	14,347	163.4	8,867	195.9	5,480	128.8	1,375	15.7	538	11.9	837	19.7	1,175	13.4	972	21.5	203	4.8
1909	13,996	156.1	8,645	185.5	5,351	124.8	1,315	14.7	564	12.1	751	17.4	1,272	14.2	996	21.4	270	6.4

1910	14,287	156.3	8,881	185.6	5,406	124.1	1,374	15.0	558	11.7	816	18.7	1,285	14.1	774	16.2	511	11.7
1911	14,491	155.9	8,967	184.0	5,524	124.9	1,316	14.2	545	11.2	771	17.4	977	10.5	658	13.5	319	7.2
1912	14,007	148.2	8,781	177.0	5,226	116.5	1,128	11.9	499	10.1	629	14.0	1,050	11.1	673	13.6	377	8.4
1913	14,096	146.8	8,842	175.1	5,254	115.4	1,018	10.6	362	7.2	656	14.4	1,072	11.2	628	12.4	444	9.8
1914	14,586	149.5	9,138	177.9	5,448	117.9	878	9.0	334	6.5	544	11.8	839	8.6	559	10.9	280	6.1
1915	14,512	146.4	9,108	174.3	5,404	115.3	775	7.8	333	6.4	442	9.4	844	8.5	630	12.1	214	4.6
1916	14,069	140.5	8,663	163.1	5,406	114.9	603	6.0	215	4.0	388	8.2	928	9.3	489	9.2	439	9.3
1917	14,795	146.2	9,120	168.9	5,675	120.2	593	5.9	229	4.2	364	7.7	904	8.9	560	10.4	344	7.3
1918[2]	15,052	147.2	8,973	163.5	6,079	128.3	575	5.6	196	3.6	379	8.0	1,281	12.5	790	14.4	491	10.4
1919	12,814	124.0	7,535	135.1	5,279	111.0	374	3.6	121	2.2	253	5.3	355	3.4	218	3.9	137	2.9
1920	11,030	105.7	6,269	110.7	4,761	99.7	371	3.6	137	2.4	234	4.9	1,101	10.5	736	13.0	365	7.6
1921	9,407	89.2	5,143	89.4	4,264	89.0	377	3.6	123	2.1	254	5.3	412	3.9	165	2.9	247	5.2

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[1] For estimates of population, see Tables 1 and 2, pages 22 and 23, respectively.

[2] Civilian deaths only, except for New York City.

Table 7 — STATE OF NEW YORK, NEW YORK CITY, and REST OF STATE: *Deaths and death rates per* 100,000 *population*[1] *from tuberculosis, typhoid fever, measles, scarlet fever, whooping cough and diphtheria:* 1885–1921 — (Concluded)

YEAR	DEATHS FROM —																	
	SCARLET FEVER (8)						WHOOPING COUGH (9)						DIPHTHERIA (10)					
	NEW YORK STATE		NEW YORK CITY		REST OF STATE		NEW YORK STATE		NEW YORK CITY		REST OF STATE		NEW YORK STATE		NEW YORK CITY		REST OF STATE	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1885	1,184	21.3	......	.....	......	.....	834	15.0	......	.....	......	.....	4,508	81.2	......	.....	......	......
1886	1,011	17.9	......	.....	......	.....	1,244	22.0	......	.....	......	.....	5,597	99.2	......	.....	......	......
1887	1,267	22.1	......	.....	......	.....	447	7.8	......	.....	......	.....	6,490	113.2	......	.....	......	......
1888	2,452	42.1	......	.....	......	.....	994	17.1	......	.....	......	.....	6,448	110.7	......	.....	......	......
1889	2,205	37.3	......	.....	......	.....	1,303	22.0	......	.....	......	.....	5,855	98.9	......	.....	......	......
1890	913	15.2	......	.....	......	.....	1,156	19.2	......	.....	......	.....	4,915	81.7	......	.....	......	......
1891	2,252	36.7	......	.....	......	.....	825	13.4	......	.....	......	.....	5,072	82.6	......	.....	......	......
1892	2,177	34.7	......	.....	......	.....	921	14.7	......	.....	......	.....	5,918	94.4	......	.....	......	......
1893	1,626	25.4	......	.....	......	.....	1,203	18.8	......	.....	......	.....	5,947	93.0	......	.....	......	......
1894	1,227	18.8	......	.....	......	.....	1,020	15.6	......	.....	......	.....	6,592	101.1	......	.....	......	......
1895	850	12.8	......	.....	......	.....	1,169	17.6	......	.....	......	.....	4,989	75.1	......	.....	......	......
1896	759	11.2	......	.....	......	.....	996	14.7	......	.....	......	.....	4,597	67.9	......	.....	......	......
1897	841	12.2	......	.....	......	.....	825	12.0	......	.....	......	.....	4,115	59.6	......	.....	......	......
1898	837	11.9	705	21.7	132	3.5	1,155	16.4	715	22.0	440	11.7	2,612	37.2	1,776	54.5	836	22.2
1899	730	10.2	533	15.9	197	5.2	886	12.4	514	15.3	372	9.8	2,786	38.9	1,925	57.5	861	22.6
1900	689	9.5	466	13.5	223	5.8	1,020	14.0	584	16.9	436	11.4	3,306	45.4	2,275	66.0	1,031	26.9
1901	1,430	19.1	1,162	32.4	268	6.9	721	9.7	292	8.1	429	11.0	3,026	40.5	2,067	57.7	959	24.7
1902	1,215	15.9	941	25.3	274	7.0	923	12.1	607	16.3	316	8.0	2,859	37.3	2,013	54.1	846	21.5
1903	1,057	13.5	737	19.1	320	8.0	811	10.3	334	8.7	477	11.9	3,035	38.7	2,185	56.7	850	21.3
1904	1,194	14.9	852	21.4	342	8.5	426	5.3	198	5.0	228	5.6	3,041	37.9	2,093	52.5	948	23.4
1905	726	8.8	469	11.4	257	6.3	847	10.3	409	9.9	433	10.7	2,296	27.9	1,538	37.3	758	18.5
1906	690	8.2	492	11.6	198	4.8	821	9.8	362	8.5	459	11.1	2,691	32.0	1,887	44.3	801	19.4
1907	1,032	12.0	797	18.2	235	5.6	789	9.2	394	9.0	395	9.4	2,603	30.3	1,741	39.6	862	20.5
1908	1,688	19.2	1,327	29.3	361	8.5	503	5.7	185	4.1	318	7.5	2,473	28.2	1,763	39.0	710	16.7
1909	1,205	13.4	787	16.9	418	9.7	783	8.7	401	8.6	382	8.9	2,313	25.8	1,715	36.8	598	13.9

1910	1,617	17.7	952	19.9	665	15.3	727	8.0	294	6.1	433	6.9	2,433	26.6	1,715	35.8	718	16.5
1911	1,149	12.4	741	15.2	408	9.2	819	8.8	383	7.9	436	9.9	1,963	21.1	1,284	26.3	679	15.4
1912	789	8.4	615	12.4	174	3.9	683	7.2	291	5.9	392	8.7	1,624	17.2	1,126	22.7	496	11.1
1913	837	8.7	507	10.0	330	7.2	822	8.6	420	8.3	402	8.8	1,853	19.3	1,334	26.4	519	11.4
1914	687	7.0	452	8.8	285	5.1	730	7.5	279	5.4	451	9.8	2,015	20.7	1,492	29.0	523	11.3
1915	415	4.2	291	5.6	124	2.6	759	7.7	396	7.6	363	7.7	1,770	17.9	1,278	24.5	492	10.5
1916	178	1.8	96	1.8	82	1.7	745	7.4	352	6.6	393	8.4	1,524	15.2	1,031	19.4	493	10.5
1917	259	2.6	120	2.2	139	2.9	894	8.8	489	9.1	405	8.6	1,755	17.3	1,158	21.4	597	12.6
1918[2]	297	2.9	177	3.2	120	2.5	1,244	12.2	665	12.1	579	12.2	1,776	17.4	1,245	22.7	531	11.2
1919	268	2.6	136	2.4	132	2.8	292	2.8	161	2.9	131	2.8	2,055	19.9	1,239	22.2	816	17.2
1920	450	4.3	220	3.9	230	4.8	1,007	9.6	615	10.9	392	8.2	1,904	18.2	1,045	18.4	850	18.0
1921	666	6.3	385	6.7	281	5.9	756	7.2	350	6.1	406	8.5	1,702	16.1	891	15.5	811	16.9

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[1] For estimates of population, see Tables 1 and 2, pages 22 and 23, respectively.

[2] Civilian deaths only, except for New York City.

Table 8 — STATE OF NEW YORK: *Typhoid fever deaths and death rates per 100,000 population, by cities:* **1917–1921**

(Cities listed in order of death rates for 1921)

CITY	Estimated population, July 1, 1921[1]	DEATHS FROM TYPHOID FEVER									
		1921		1920		1919		1918[2]		1917	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
NEW YORK STATE	10,543,105	377	3.6	371	3.6	374	3.6	575	5.6	593	5.9
New York City	5,751,859	123	2.1	137	2.4	121	2.2	196	3.6	229	4.2
Rest of State	4,791,246	254	5.3	234	4.9	253	5.3	379	8.0	364	7.7
Urban[3]	2,558,122	142	5.6	121	4.8	159	6.5	219	9.1	209	8.8
Rural[4]	2,187,393	106	4.8	110	5.0	89	4.0	151	6.6	142	6.2
Institutional districts	45,731	6	....	3	....	5	....	9	....	13	....
Ogdensburg[5]	11,701	3	25.6	2	16.5	2	15.9	3	23.1	3	22.3
Little Falls	13,031	3	23.0	....	....	1	7.7	4	30.7	4	30.7
Kingston	26,797	5	18.7	3	11.2	2	7.5	12	45.1	3	11.3
North Tonawanda	16,131	3	18.6	3	19.1	17	111.4	4	27.0	2	13.9
Ithaca	17,087	3	17.6	1	5.9	....	....	2	11.8	3	17.8
Cortland	13,597	2	14.7	....	....	1	7.6	2	15.4	1	7.8
Fulton	13,666	2	14.6	....	....	....	....	3	24.2	....	....
Elmira[5]	45,956	6	13.1	3	6.7	4	9.1	8	18.6	3	7.1
Hornell	15,245	2	13.1	....	....	....	....	....	....	....	....
Glens Falls	16,741	2	11.9	2	12.0	1	6.0	2	12.1	2	12.1
Dunkirk	19,816	2	10.1	2	10.3	1	5.2	1	5.3	1	5.4
Beacon[5]	10,061	1	9.9	1	9.9	....	....	....	....	....	....
Troy	70,876	7	9.9	4	5.6	4	5.5	17	23.2	22	29.8
Port Jervis	10,419	1	9.6	....	....	....	....	1	10.1	....	....
Tonawanda	10,369	1	9.6	2	19.7	12	120.4	2	20.5	....	....
Niagara Falls	53,543	5	9.3	4	7.7	2	4.0	1	2.1	5	10.8
Oneida	10,894	1	9.2	....	....	....	....	1	9.8	....	....
Mount Vernon	44,409	4	9.0	....	....	....	....	2	4.9	4	10.0
Plattsburg	11,163	1	9.0	1	9.1	1	9.2	3	28.2	4	38.1
Cohoes	22,841	2	8.8	....	....	2	8.7	....	....	5	21.5
Auburn[5]	35,773	3	8.4	5	11.2	5	14.4	6	17.6	2	6.0
Oneonta	11,945	1	8.4	1	8.5	1	8.7	1	8.9	1	9.1
Poughkeepsie	35,748	3	8.4	2	5.7	1	2.9	3	8.8	3	8.9
Batavia	13,627	1	7.3	1	7.4	....	....	5	37.2	1	7.5
Utica[5]	99,060	7	7.1	1	1.0	1	1.1	7	7.7	11	12.4

Geneva	15,111	1	6.6	......	......	......	......	4	28.2	2	14.4
Watertown	32,722	2	6.1	6	18.9	4	13.0	7	23.5	3	10.4
Watervliet	16,427	1	6.1	......	......	1	6.3	3	19.1	1	6.5
Corning	16,593	1	6.0	......	......	1	6.4	5	33.2	4	27.5
Port Chester, *village*	17,046	1	5.9	1	6.0	1	6.1	......	......	......	......
Schenectady	91,453	5	5.5	7	7.8	2	2.3	4	4.7	4	4.8
New Rochelle	37,671	2	5.3	......	......	......	......	2	5.8	1	3.0
Olean	21,351	1	4.7	1	4.8	2	9.9	1	5.1	1	5.2
White Plains	21,602	1	4.6	1	4.7	1	4.8	1	4.9	......	......
Binghamton [5]	67,380	3	4.5	7	10.7	1	1.6	1	1.6	7	12.0
Gloversville	22,369	1	4.5	2	9.0	1	4.6	......	......	1	4.6
Lockport	22,164	1	4.5	1	4.6	3	14.3	5	24.4	6	30.2
Albany	115,100	5	4.3	4	3.5	9	8.0	12	10.8	13	11.8
Oswego	23,037	1	4.3	1	4.3	1	4.2	3	12.4	1	4.1
Buffalo [5]	520,736	22	4.2	26	5.1	33	6.6	38	7.8	47	9.8
Rome [5]	25,173	1	4.0	2	8.1	1	4.1	3	12.7	2	8.7
Syracuse [5]	179,505	7	3.9	7	4.0	12	7.1	14	8.6	10	6.4
Yonkers	103,196	4	3.9	......	......	1	1.0	2	2.1	6	6.3
Newburgh	31,181	1	3.2	3	9.8	5	16.6	4	13.5	......	......
Rochester [5]	305,263	9	2.9	3	1.0	10	3.4	5	1.8	8	2.9
Jamestown	39,289	1	2.5	3	7.7	1	2.6	1	2.6	2	5.2
Amsterdam	33,264	......	......	2	6.0	......	......	......	......	......	......
Canandaigua	7,309	......	......	1	13.6	......	......	1	13.5	1	13.4
Glen Cove	8,945	......	......	1	11.4	......	......	......	......	......	......
Hudson [5]	11,337	......	......	......	......	1	8.8	2	17.5	2	17.4
Johnstown	10,980	......	......	......	......	......	......	......	......	......	......
Lackawanna [5]	18,333	......	......	......	......	2	11.4	......	......	......	......
Mechanicville	8,152	......	......	1	12.3	4	49.0	......	......	4	48.8
Middletown [5]	16,150	......	......	1	6.2	1	6.2	3	18.4	1	6.1
Norwich	8,244	......	......	......	......	1	12.1	1	12.1	......	......
Ossining, *village* [5]	9,426	......	......	1	10.4	......	......	2	20.3	......	......
Peekskill, *village*	15,988	......	......	......	......	......	......	......	......	......	......
Rensselaer	10,696	......	......	......	......	......	......	......	......	1	9.1
Salamanca	9,573	......	......	......	......	1	10.9	1	11.1	......	......
Saratoga Springs	12,981	......	......	1	7.6	1	7.5	4	29.9	1	7.4
Sherrill [6]	1,879	......	......	......	......	......	......	......	......	......	......

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[1] Population estimates are based upon the average annual increase or decrease between the United States Censuses of 1910 and 1920 for New York City, and upon the State Enumeration of 1915 and United States Census of 1920 for the rest of State.

[2] Civilian deaths only, except for New York City.

[3] Includes cities and three large villages listed.

[4] "Rural" as used in this table includes all of New York State, exclusive of New York City and the cities and three large villages listed, and institutional districts.

[5] Exclusive of populations and deaths in institutional districts.

[6] Special charter.

Table 9 — STATE OF NEW YORK: *Pulmonary tuberculosis deaths and death rates per 100,000 population, by cities:* 1917–1921

(Cities listed in order of death rates for 1921)

CITY	Estimated population, July 1, 1921[1]	DEATHS FROM PULMONARY TUBERCULOSIS (31, 37c)									
		1921		1920		1919		1918[2]		1917	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
NEW YORK STATE	10,543,105	9,407	89.2	11,030	105.7	12,814	124.0	5,052	147.2	14,795	146.2
New York City	5,751,859	5,143	89.4	6,269	110.7	7,535	135.1	8,973	163.5	9,120	168.9
Rest of State	4,791,246	4,264	89.0	4,761	99.7	5,279	111.0	6,079	128.3	5,675	120.2
Cities[3],	2,558,122	1,671	65.3	1,905	75.9	2,180	88.4	2,745	113.5	2,730	115.1
Rural[4]	2,187,393	2,171	99.3	2,349	106.0	2,527	112.5	2,729	119.9	2,429	105.4
Institutional districts	45,781	422	....	507	....	572	....	605	....	516	....
Rome[5]	25,173	42	166.8	46	186.7	70	290.4	106	449.7	85	369.0
Kingston	26,797	40	149.3	38	142.2	56	210.1	56	210.7	53	200.0
Newburgh	31,181	35	112.2	52	169.7	64	212.7	58	196.3	11	37.9
Albany	115,100	116	100.8	135	118.5	165	146.3	208	186.4	212	192.0
Saratoga Springs	12,981	13	100.1	14	106.8	15	113.2	19	142.0	11	81.4
Cohoes	22,841	22	96.3	25	109.0	36	156.3	38	164.3	36	155.0
Buffalo[5]	520,736	487	93.5	472	92.6	536	107.4	735	150.6	708	148.3
Yonkers	103,196	91	88.2	121	119.6	107	107.9	121	124.5	118	124.0
Auburn[5]	35,773	29	81.1	34	96.5	29	83.6	31	90.8	34	101.2
Beacon[5]	10,061	8	79.5	8	79.4	7	69.3	7	69.2	15	148.1
Watertown	32,722	26	79.5	30	94.4	28	90.9	35	117.3	25	86.5
Oswego	23,037	18	78.1	6	25.6	25	104.9	12	49.6	25	101.6
Jamestown	39,289	30	76.4	26	66.6	33	85.1	34	88.2	44	114.9
Middletown[5]	16,150	12	74.3	13	80.3	18	110.9	17	104.5	16	98.1
Geneva	15,111	11	72.8	8	54.0	3	20.7	10	70.5	4	28.8
Peekskill, *village*	15,988	11	68.8	8	50.3	14	88.5	21	133.4	19	121.3
Tonawanda	10,369	7	67.5	9	88.5	9	90.3	7	71.7	6	62.7
Watervliet	16,427	11	67.0	18	111.2	17	106.5	29	184.5	18	116.3
Troy	70,876	46	64.9	56	78.2	89	122.9	156	213.3	182	246.3
Plattsburg	11,163	7	62.7	22	200.1	17	157.1	14	131.4	12	114.4
North Tonawanda	16,131	10	62.0	10	63.7	9	59.0	10	67.4	15	104.2
Hudson[5]	11,337	7	61.7	13	114.3	13	114.0	10	87.4	11	95.9
Ogdensburg[5]	11,701	7	59.8	5	41.2	4	31.8	3	23.1	8	59.5
Lockport	22,164	13	58.7	10	46.3	10	47.6	10	48.9	27	135.8
Amsterdam	33,264	19	57.1	20	59.8	31	92.2	33	97.7	35	103.1

Binghamton [5]	67,380	37	54.9	31	47.6	40	63.6	58	95.7	56	95.9
Canandaigua	7,309	4	54.7	3	40.9	4	54.8	5	67.5	7	94.1
Johnstown	10,980	6	54.6	4	36.6	10	91.9	8	73.8	4	37.1
Corning	16,593	9	54.2	13	80.9	11	70.7	6	39.9	15	103.2
Salamanca	9,573	5	52.2	4	42.7	3	32.7	6	66.8	6	68.3
Syracuse [3]	179,505	92	51.3	81	46.6	90	53.5	143	87.9	136	86.6
Gloversville	22,369	11	49.2	13	58.6	14	63.7	22	101.0	14	64.9
Rochester [3]	305,263	149	48.8	186	62.5	190	65.5	250	88.4	238	86.5
Port Jervis	10,419	5	48.0	18	175.5	5	49.6	7	70.5	7	71.7
Glens Falls	16,741	8	47.8	18	108.0	24	144.5	12	72.6	15	91.1
Batavia	13,627	6	44.0	4	29.5	10	74.0	12	89.2	9	67.2
Mount Vernon	44,409	19	42.8	23	53.1	19	45.1	16	39.0	20	50.1
Poughkeepsie	35,748	15	42.0	20	56.7	19	54.7	30	87.6	29	85.9
Dunkirk	19,816	8	40.4	8	41.0	16	83.4	16	84.9	16	86.3
Hornell	15,245	6	39.4	12	79.5	11	73.6	5	33.8	10	68.2
Utica [5]	99,060	39	39.4	57	59.1	70	74.6	88	96.5	74	83.6
White Plains	21,602	8	37.0	15	70.7	18	86.4	17	83.1	13	64.7
Fulton	13,666	5	36.6	6	45.3	5	39.0	9	72.5	4	33.3
Schenectady	91,453	33	36.1	53	59.1	58	66.0	68	79.1	64	76.0
Elmira [5]	45,956	16	34.8	20	44.5	18	40.9	37	85.9	33	78.4
New Rochelle	37,671	13	34.5	17	46.3	16	44.8	19	54.7	85	251.6
Niagara Falls	53,543	18	33.6	26	50.3	28	56.2	34	70.9	35	75.9
Oneonta	11,945	4	33.5	2	17.1	5	43.6	5	44.6	6	54.7
Olean	21,351	7	32.8	7	33.7	10	49.4	12	61.0	4	20.9
Cortland	13,597	4	29.4	8	59.7	6	45.5	11	84.7	9	70.4
Oneida	10,894	3	27.5	5	46.9	7	67.2	11	108.0	5	50.2
Lackawanna [5]	18,333	5	27.3	12	67.0	8	45.8	9	52.8	21	126.3
Mechanicville	8,152	2	24.5	1	12.3	5	61.2	5	61.1	6	73.3
Port Chester, *village*	17,046	4	23.5	11	65.7	12	73.1	8	49.7	13	82.4
Ithaca	17,087	4	23.4	6	35.2	9	53.0	8	47.3	9	53.4
Little Falls	13,031	3	23.0	3	23.0	13	99.8	8	61.4	8	61.4
Ossining, *village* [5]	9,426	2	21.2	7	73.1	9	92.6	3	30.4	11	109.8
Norwich	8,244	1	12.1	1	12.1	1	12.1	5	60.3	8	96.3
Glen Cove	8,945	1	11.2	3	34.3	5	58.3	3	35.8	......	......
Rensselaer	10,696	1	9.3	8	74.2	4	36.8	9	82.2	10	90.6
Sherrill [6]	1,879	......	......	......	......	2	116.1	......	......	......	......

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[1] Population estimates are based upon the average annual increase or decrease between the United States Censuses of 1910 and 1920 for New York City, and upon the State Enumeration of 1915 and United States Census of 1920 for the rest of State.

[2] Civilian deaths only, except for New York City.

[3] Includes cities and three large villages listed.

[4] "Rural" as used in this table includes all of New York state, exclusive of New York City and the cities and three large villages listed, and institutional districts.

[5] Exclusive of populations and deaths in institutional districts.

[6] Special charter.

Table 10 — STATE OF NEW YORK, NEW YORK CITY, and REST OF STATE:
stillbirths and deaths, by months, with birth and death rates per 1,000 *popula*
infant mortality: **1921**

MONTH	Births (exclusive of still-births)	Still-births	Deaths (exclusive of still-births)	RATE PER 1,000 POPULATION		DEATH FANTS 1 Y
				Births	Deaths	Total
NEW YORK STATE	**240,210**	**10,234**	**130,110**	**22.8**	**12.3**	**18,070**
New York City	**134,241**	**6,292**	**64,257**	**23.3**	**11.2**	**9,548**
Rest of State	**105,969**	**3.942**	**65,853**	**22.1**	**13.7**	**8,522**
January, total	20,181	869	12,409	22.6	13.9	1,678
New York City	11,330	543	6,191	23.2	12.7	872
Rest of State	8,851	326	6,218	21.8	15.3	806
February, total	19,012	909	11,537	23.4	14.2	1,636
New York City	10,667	484	5,855	24.1	13.2	847
Rest of State	8,345	325	5,682	22.6	15.4	789
March, total	21.640	912	12,766	24.2	14.3	1,752
New York City	12,282	561	6,531	25.2	13.4	893
Rest of State	9,358	351	6,235	23.0	15.4	859
April, total	20,247	909	11,477	23.4	13.3	1.507
New York City	11,362	551	5,882	24.1	12.5	859
Rest of State	8,885	358	5,595	22.6	14.2	648
May, total	19,884	823	11,013	22.3	12.3	1,368
New York City	10,780	501	5,406	22.1	11.1	724
Rest of State	9,104	322	5,607	22.4	13.8	644
June, total	20,183	890	9,737	23.4	11.3	1,252
New York City	11,457	553	4,927	24.3	10.5	709
Rest of State	8,726	337	4,810	22.2	12.2	543
July, total	20,114	869	9,850	22.5	11.0	1,474
New York City	11,073	554	4,766	22.7	9.8	857
Rest of State	9,041	315	5,084	22.3	12.5	617
August, total	21,339	833	10,063	23.9	11.3	1,760
New York City	11,905	494	4,702	24.4	9.6	913
Rest of State	9,434	339	5,361	23.2	13.2	847
September, total	20,121	824	9,472	23.3	11.0	1,618
New York City	11,289	512	4,422	23.9	9.4	773
Rest of State	8,832	312	5,050	22.5	12.9	845
October, total	19,559	817	10.239	21.9	11.5	1,402
New York City	10.841	501	4.831	22.2	9.9	699
Rest of State	8,718	316	5.408	21.5	13.3	703
November, total	19,264	837	10,366	22.3	12.0	1,253
New York City	10,901	528	5.110	23.1	10.8	656
Rest of State	8,363	309	5,256	21.3	13.4	597
December, total	18,666	842	11,181	20.9	12.5	1,370
New York City	10,354	510	5,634	21.2	11.6	746
Rest of State	8,312	332	5,547	20.5	13.7	624

11 — STATE OF NEW YORK, NEW YORK CITY, and REST OF STATE: *Births* *lusive of stillbirths), by months, according to sex and color:* 1921

MONTH F BIRTH	All births	Sex		Color				
		Male	Female	White	Negro	American Indian	Chinese	Japanese
YORK STATE	**240,210**	**123,570**	**116,640**	**234,631**	**5,349**	**116**	**70**	**44**
York City	**134,241**	**68,861**	**65,380**	**129,689**	**4,447**	.....	**61**	**44**
of State	**105,969**	**54,709**	**51,260**	**104,942**	**902**	**116**	**9**	......
y, total	20,181	10,440	9,741	19,700	449	15	14	3
York City	11,330	5,809	5,521	10,950	365	.....	12	3
of State	8,851	4,631	4,220	8,750	84	15	2	......
ry, total	19,012	9,803	9,209	18,538	458	9	2	5
York City	10,667	5,505	5,162	10,291	369	.....	2	5
of State	8,345	4,298	4,047	8,247	89	9	.....	......
total	21,640	11,061	10,579	21,157	458	17	5	3
York City	12,282	6,290	5,992	11,906	369	.....	4	3
of State	9,358	4,771	4,587	9,251	89	17	1	......
otal	20,247	10,410	9,837	19,749	465	17	8	8
York City	11,362	5,804	5,558	10,954	394	.....	6	8
of State	8,885	4,606	4,279	8,795	71	17	2	......
otal	19,884	10,252	9,632	19,449	422	8	2	3
York City	10,780	5,552	5,228	10,432	343	.....	2	3
of State	9,104	4,700	4,404	9,017	79	8	.....	......
otal	20,183	10,309	9,874	19,685	480	11	3	4
York City	11,457	5,881	5,576	11,047	403	.....	3	4
of State	8,726	4,428	4,298	8,638	77	11	.....	......
otal	20,114	10,473	9,641	19,650	449	8	6	1
York City	11,073	5,828	5,245	10,682	386	.....	4	1
of State	9,041	4,645	4,396	8,968	63	8	2	......
, total	21,339	11,099	10,240	20,890	439	3	3	4
York City	11,905	6,219	5,686	11,526	372	.....	3	4
of State	9,434	4,880	4,554	9,364	67	3	.....	......
ber, total	20,121	10,320	9,801	19,631	471	6	9	4
York City	11,289	5,748	5,541	10,884	392	.....	9	4
of State	8,832	4,572	4,260	8,747	79	6	.....	......
r, total	19,559	9,954	9,605	19,121	426	3	5	4
York City	10,841	5,488	5,353	10,471	362	.....	4	4
of State	8,718	4,466	4,252	8,650	64	3	1	......
ber, total	19,264	9,938	9,326	18,829	419	8	8	......
York City	10,901	5,555	5,346	10,538	355	.....	8	......
of State	8,363	4,383	3,980	8,291	64	8	.....	......
ber, total	18,666	9,511	9,155	18,232	413	11	5	5
York City	10,354	5,182	5,172	10,008	337	.....	4	5
of State	8,312	4,329	3,983	8,224	76	11	1	......

Table 12 — State of New York, New York City, and Rest of State: *D*
(exclusive of stillbirths), by sex, color, marital condition and general nat
1921

Sex, Color, Marital Condition, General Nativity	New York State	New York City
Total deaths	130,110	64,257
Sex:		
Male	67,530	33,844
Female	62,580	30,413
Color or race:		
White	126,013	61,183
Negro	3,848	2,901
Chinese and Japanese	180	173
American Indian	69	....
Marital condition:		
Single	49,475	26,509
Married	49,595	24,073
Widowed and divorced	30,325	13,207
Unknown	715	468
General nativity:		
Native	87,784	36,855
Foreign-born	40,878	26,425
Unknown	1,448	977

Table 13 — State of New York, New York City, and Rest of State: *N*
and per cent of deaths (exclusive of stillbirths), by age of decedent: **1921**

Ages at Death	New York State		New York City		Rest of Stat	
	Deaths	Per cent	Deaths	Per cent	Deaths	Per
Total deaths — all ages	130.110	100.0	64,257	100.0	65,853	
Under 1 year	18,070	13.9	9,548	14.9	8,522	
1 year	3,195	2.5	1,910	3.0	1,285	
2 years	1,596	1.2	949	1.5	647	
3 years	1,192	0.9	701	1.1	491	
4 years	968	0.7	564	0.9	404	
Total under 5 years	25,021	19.2	13,672	21.4	11,349	
5–9 years	3,022	2.3	1,668	2.6	1,354	
10–14 years	2,066	1.6	1,135	1.8	931	
15–19 years	2,569	2.0	1,383	2.2	1,186	
20–24 years	3,712	2.9	2,106	3.3	1,606	
25–29 years	4,282	3.3	2,471	3.8	1,811	
30–34 years	4,569	3.5	2,596	4.0	1,973	
35–39 years	5,310	4.1	3,106	4.8	2,204	
40–44 years	5,790	4.5	3,337	5.2	2,453	
45–49 years	6,775	5.2	3,874	6.0	2,901	
50–54 years	8,039	6.2	4,521	7.0	3,518	
55–59 years	8,737	6.7	4,714	7.3	4,023	
60–64 years	10,232	7.8	5,155	8.0	5,077	
65–69 years	10,174	7.8	4,557	7.1	5,617	
70–74 years	9,910	7.6	3,924	6.1	5,986	
75–79 years	8,789	6.8	2,936	4.6	5,853	
80–84 years	6,291	4.8	1,877	2.9	4,414	
85 years and over	4,786	3.7	1,225	1.9	3,561	
Unknown	36	....	....	....	36	...

Table 14 — NEW YORK STATE, NEW YORK CITY, and REST OF STATE: *Deaths (exclusive of stillbirths), by each cause and class of causes:* 1921

Detailed int. list numbers[1]	CAUSES OF DEATH (Detailed International List)	New York State	New York City	Rest of State
1-205	**Total deaths — all causes**	**130,110**	**64,257**	**65,853**
1-42	**I. Epidemic, endemic and infectious diseases**	**17,791**	**9,483**	**8,308**
1	Typhoid and paratyphoid fever	377	123	254
	(a) Typhoid fever	373	122	251
	(b) Paratyphoid fever	4	1	3
2	Typhus fever	4	4	....
3	Relapsing fever (spirillum obermeieri)	....	....	....
4	Malta fever	....	....	....
5	Malaria	14	6	8
6	Smallpox	1	....	1
7	Measles	412	165	247
8	Scarlet fever	666	385	281
9	Whooping cough	756	350	406
10	Diphtheria	1,702	891	811
11	Influenza	778	384	394
	(a) With pulmonary complications specified	....	[2]	164
	(b) Without pulmonary complications specified	....	[2]	230
12	Miliary fever	....	....	....
13	Mumps	14	2	12
14	Asiatic cholera	....	....	....
15	Cholera nostras	16	....	16
16	Dysentery	69	14	55
	(a) Amebic	....	[2]	1
	(b) Bacillary	....	[2]	3
	(c) Unspecified or due to other causes	....	[2]	51
17	Plague	....	....	....
18	Yellow fever	....	....	....
19	Spirochetal hemorrhagic jaundice	....	....	....
20	Leprosy	2	1	1
21	Erysipelas	336	177	159
22	Acute poliomyelitis	266	143	123
23	Lethargic encephalitis	280	194	86
24	Meningococcus meningitis	176	147	29
25	Other epidemic and endemic diseases	26	17	9
	(a) Chicken-pox	17	9	8
	(b) German measles	2	1	1
	(c) Others under this title	7	7	....
26	Glanders	....	....	....
27	Anthrax	6	4	2
28	Rabies	4	3	1
29	Tetanus	70	15	55
30	Mycoses	16	13	3
31-37	**Tuberculosis (total)**	**10,775**	**5,922**	**4,853**
31	Tuberculosis of the respiratory system	9,326	5,143	4,183
32	Tuberculosis of the meninges and central nervous system	630	383	247
33	Tuberculosis of the intestines and peritoneum	288	124	164
34	Tuberculosis of the vertebral column	100	49	51
35	Tuberculosis of the joints	54	27	27
36	Tuberculosis of other organs	154	65	89
	(a) Tuberculosis of the skin and subcutaneous cellular tissue	....	[2]	8
	(b) Tuberculosis of the bones (vertebral column excepted)	....	[2]	17
	(c) Tuberculosis of the lymphatic system (mesenteric and retroperitoneal glands excepted)	....	[2]	12
	(d) Tuberculosis of the genitourinary system	....	[2]	39
	(e) Tuberculosis of organs other than the above	....	[2]	13
37	Disseminated tuberculosis	223	131	92
	(a) Acute	98	96	2
	(b) Chronic	44	35	9
	(c) Acute miliary	[2] 81	[2]	81
38	Syphilis	783	387	396
39	Soft chancre	1	....	1
40	Gonococcus infection	39	30	9
41	Purulent infection, septicemia	202	106	96
42	Other infectious diseases	....	....	....

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[1] Third decennial revision by the International Commission, Paris, October 11-14, 1920.
[2] Not furnished separately by New York City.

Table 14 — NEW YORK STATE, NEW YORK CITY, and REST OF STATE: ***Deaths by causes, in accordance with the Detailed International List:*** **1921 — (Continued)**

Detailed int. list numbers[1]	CAUSES OF DEATH (Detailed International List)	New York State	New York City	Rest of State
43–69	**II. General diseases not included above**	**16,085**	**8,082**	**8,003**
43–50	**Cancer and other malignant tumors (total)**	**11,163**	**5,573**	**5,590**
43	Of the buccal cavity	385	181	204
44	stomach and liver	3,998	2,105	1,893
45	peritoneum, intestines and rectum	1,772	906	866
46	female genital organs	1,538	671	867
47	breast	1,040	502	538
48	skin	250	74	176
49	other organs or of organs not specified	2,180	1,134	1,046
50	Benign tumors and tumors not returned as malignant (tumors of the female genital organs excepted)	254	236	18
51	Acute rheumatic fever	492	245	247
52	Chronic rheumatism, osteoarthritis, gout	147	65	82
53	Scurvy	10	7	3
54	Pellagra	21	7	14
55	Beriberi	2	2	....
56	Rickets	58	34	24
57	Diabetes mellitus	2,220	1,120	1,100
58	Anemia, chlorosis	645	237	408
	(a) Pernicious anemia	....	[2]	375
	(b) Other anemias and chlorosis	....	[2]	33
59	Diseases of the pituitary gland	5	2	3
60	Diseases of the thyroid gland	244	107	137
	(a) Exophthalmic goitre	165	68	97
	(b) Other diseases of the thyroid gland	79	39	40
61	Diseases of the parathyroid glands	4	1	3
62	Diseases of the thymus gland	36	21	15
63	Diseases of the adrenals (Addison's disease)	62	28	34
64	Diseases of the spleen	20	11	9
65	Leukemia and Hodgkin's disease	245	136	109
	(a) Leukemia	....	[2]	77
	(b) Hodgkin's disease	....	[2]	32
66	Alcoholism (acute or chronic)	180	119	61
67	Chronic poisoning by mineral substances	16	10	6
	(a) Chronic lead poisoning	15	9	6
	(b) Others under this title	1	1	....
68	Chronic poisoning by organic substances	63	54	9
69	Other general diseases	198	67	131
70–86	**III. Diseases of the nervous system and of the organs of special sense**	**10,896**	**2,405**	**8,491**
70	Encephalitis	118	47	71
71	Meningitis (total)	356	148	208
	(a) Simple meningitis	283	148	135
	(b) Non-epidemic cerebrospinal meningitis	73	....	73
72	Tabes dorsalis (locomotor ataxia)	207	81	126
73	Other diseases of the spinal cord	469	154	315
74	Cerebral hemorrhage, apoplexy	7,148	886	6,262
	(a) Cerebral hemorrhage	....	[2]	6,032
	(b) Cerebral thrombosis and embolism	....	[2]	230
75	Paralysis without specified cause	391	64	327
	(a) Hemiplegia	....	[2]	152
	(b) Others under this title	....	[2]	175
76	General paralysis of the insane	681	282	399
77	Other forms of mental alienation	235	147	88
78	Epilepsy	283	115	168
79	Convulsions (non-puerperal) [5 years and over]	16	3	13
80	Infantile convulsions [under 5 years of age]	132	25	107
81	Chorea	36	31	5
82	Neuralgia and neuritis	25	....	25
83	Softening of the brain	72	4	68
84	Other diseases of the nervous system	228	73	155
85	Diseases of the eye and annexa	8	5	3
86	Diseases of the ear and of the mastoid process	491	340	151
	(a) Diseases of the ear	....	[2]	91
	(b) Diseases of the mastoid process	....	[2]	60

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[1] Third decennial revision by the International Commission. Paris, October 11–14, 1920.

[2] Not furnished separately by New York City.

Table 14 — NEW YORK STATE, NEW YORK CITY, and REST OF STATE: ***Deaths by causes, in accordance with the Detailed International List:*** **1921 — (Continued)**

Detailed int. list numbers[1]	CAUSES OF DEATH (Detailed International List)	New York State	New York City	Rest of State
87–96	**IV. Diseases of the circulatory system**	**29,333**	**15,696**	**13,637**
87	Pericarditis	111	49	62
88	Endocarditis and myocarditis (acute)	997	394	603
89	Angina pectoris	1,127	418	709
90	Other diseases of the heart	22,093	12,005	10,088
91	Diseases of the arteries	4,655	2,699	1,956
	(a) Aneurysm	151	85	66
	(b) Arteriosclerosis	4,486	2,614	1,872
	(c) Other diseases of the arteries	18	....	18
92	Embolism and thrombosis (not cerebral)	166	40	126
93	Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)	59	31	28
94	Diseases of the lymphatic system (lymphangitis, etc.)	106	58	48
95	Hemorrhage without specified cause	4	2	2
96	Other diseases of the circulatory system	15	....	15
97–107	**V. Diseases of the respiratory system**	**12,716**	**7,444**	**5,272**
97	Diseases of the nasal fossae and their annexa	12	6	6
	(a) Diseases of the nasal fossae	....	[2]	4
	(b) Others under this title	....	[2]	2
98	Diseases of the larynx	63	23	40
99	Bronchitis	1,145	547	598
	(a) Acute	693	421	272
	(b) Chronic	281	126	155
	(c) Not otherwise defined under 5 years of age	63	[2]	63
	(d) Not otherwise defined 5 years and over	108	[2]	108
100	Bronchopneumonia (including capillary bronchitis)	4,779	2,900	1,879
	(a) Bronchopneumonia	....	[2]	1,805
	(b) Capillary bronchitis	....	[2]	74
101	Pneumonia	5,866	3,577	2,289
	(a) Lobar	....	[2]	2,038
	(b) Not otherwise defined	....	[2]	251
102	Pleurisy	388	207	181
103	Congestion and hemorrhagic infarct of the lung	134	31	103
104	Gangrene of the lung	21	5	16
105	Asthma	161	85	76
106	Pulmonary emphysema	30	16	14
107	Other diseases of the respiratory system (tuberculosis excepted)	117	47	70
	(a) Chronic interstitial pneumonia, including occupational diseases of the lung	....	[2]	2
	(b) Diseases of the mediastinum	....	[2]	1
	(c) Others under this title	....	[2]	67
108–127	**VI. Diseases of the digestive system**	**10,987**	**5,424**	**5,563**
108	Diseases of the mouth and annexa	88	48	40
109	Diseases of the pharynx and tonsils (including adenoid vegetations)	357	162	195
	(a) Adenoid vegetations	6	[2]	6
	(b) Septic sore throat	74	24	50
	(c) Others under this title	277	138	139
110	Diseases of the esophagus	23	8	15
111	Ulcer of the stomach and duodenum	545	303	242
	(a) Ulcer of the stomach	....	[2]	187
	(b) Ulcer of the duodenum	....	[2]	55
112	Other diseases of the stomach (cancer excepted)	517	135	382
113	Diarrhea and enteritis (under 2 years of age)	3,952	1,987	1,965
114	Diarrhea and enteritis (2 years and over)	775	279	496
115	Ankylostomiasis	....	....	....
116	Diseases due to other intestinal parasites	6	4	2
117	Appendicitis and typhlitis	1,468	824	644

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Table 14 — NEW YORK STATE, NEW YORK CITY, and REST OF STATE: *Deaths by causes, in accordance with the Detailed International List:* **1921 — (Continued)**

Detailed int. list numbers[1]	CAUSES OF DEATH (Detailed International List)	New York State	New York City	Rest of State
118	Hernia, intestinal obstruction	1,226	651	575
	(a) Hernia	560	337	223
	(b) Intestinal obstruction	666	314	352
119	Other diseases of the intestines	148	73	75
120	Acute yellow atrophy of the liver	39	16	23
121	Hydatid tumor of the liver	13	12	1
122	Cirrhosis of the liver	729	335	394
	(a) Specified as alcoholic	....	[2]	11
	(b) Not specified as alcoholic	....	[2]	383
123	Biliary calculi	404	246	158
124	Other diseases of the liver	460	238	222
	(a) Infective jaundice, etc. (epidemic)	....	[2]	59
	(b) Other	....	[2]	163
125	Diseases of the pancreas	79	45	34
126	Peritonitis without specified cause	139	44	95
127	Other diseases of the digestive system (cancer and tuberculosis excepted)	19	14	5
128–142	**VII. Non-venereal diseases of the genitourinary system and annexa**	**11,064**	**4,935**	**6,129**
128	Acute nephritis (including unspecified under 10 years of age)	609	219	390
129	Chronic nephritis (including unspecified 10 years and over)	8,872	3,886	4,986
130	Chyluria	....	....	....
131	Other diseases of the kidneys and annexa (diseases of the kidneys in pregnancy excepted)	303	129	174
132	Calculi of the urinary passages	99	63	36
133	Diseases of the bladder	108	27	81
134	Diseases of the urethra, urinary abscess, etc	48	37	11
	(a) Stricture of the urethra	....	[2]	5
	(b) Others under this title	....	[2]	6
135	Diseases of the prostate	376	194	182
136	Non-venereal diseases of the male genital organs	18	11	7
137	Cysts and other benign tumors of the ovary	102	59	43
138	Salpingitis and pelvic abscess	195	100	95
139	Benign tumors of the uterus	244	158	86
140	Non-puerperal uterine hemorrhage	5	1	4
141	Other diseases of the female genital organs	83	51	32
142	Non-puerperal diseases of the breast (cancer excepted)	2	....	2
143–150	**VIII. The puerperal state**	**1,396**	**746**	**650**
143	Accidents of pregnancy	193	132	61
	(a) Abortion	....	[2]	25
	(b) Ectopic gestation	....	[2]	21
	(c) Others under this title	....	[2]	15
144	Puerperal hemorrhage	182	100	82
145	Other accidents of labor	192	122	70
	(a) Caesarian section	....	[2]	23
	(b) Other surgical operations and instrumental delivery	....	[2]	5
	(c) Others under this title	....	[2]	42
146	Puerperal septicemia	412	171	241
147	Puerperal phlegmasia alba dolens, embolus, sudden death	73	43	29
148	Puerperal albuminuria and convulsions	334	169	165
149	Following childbirth (not otherwise defined)	10	8	2
150	Puerperal diseases of the breast	1	1	....
151–154	**IX. Diseases of the skin and of the cellular tissue**	**473**	**241**	**232**
151	Gangrene	112	23	89
152	Furuncle	108	62	46
153	Acute abscess	147	89	58
154	Other diseases of the skin and annexa	106	67	39

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Table 14 — NEW YORK STATE, NEW YORK CITY, and REST OF STATE: *Deaths by causes, in accordance with the Detailed International List:* **1921 — (Continued)**

Detailed int. list numbers[1]	CAUSES OF DEATH (Detailed International List)	New York State	New York City	Rest of State
155–158	**X. Diseases of the bones and of the organs of locomotion**	**232**	**131**	**101**
155	Diseases of the bones (tuberculosis excepted)	191	103	88
156	Diseases of the joints (tuberculosis and rheumatism excepted)	31	21	10
157	Amputations	1	....	1
158	Other diseases of the organs of locomotion	9	7	2
159	**XI. Malformations**	**1,504**	**672**	**832**
159	Congenital malformations (stillbirths not included)	1,504	672	832
	(a) Hydrocephalus	170	89	81
	(b) Congenital malformations of the heart	836	342	494
	(c) Others under this title	498	241	257
160–163	**XII. Early infancy**	**7,599**	**4,039**	**3,560**
160	Congenital debility, icterus, and sclerema	1,222	729	493
161	Premature birth, Injury at birth	5,453	2,650	2,803
	(a) Premature birth	4,233	2,047	2,186
	(b) Injury at birth	1,220	603	617
162	Other diseases peculiar to early infancy	915	657	258
163	Lack of care	9	3	6
164	**XIII Old age**	**708**	**223**	**485**
164	Senility	708	223	485
165–203	**XIV. External causes**	**9,130**	**4,617**	**4,513**
165–174	Suicides (total)	1,442	831	611
165	By solid or liquid poisons (corrosive substances excepted)	53	17	36
166	By corrosive substances	138	74	64
167	By poisonous gas	350	293	57
168	By hanging or strangulation	269	98	171
169	By drowning	89	35	54
170	By firearms	310	147	163
171	By cutting or piercing instruments	84	40	44
172	By jumping from high places	116	101	15
173	By crushing	20	17	3
174	Other suicides	13	9	4
	Accidental or undefined (total)	7,187	3,483	3,704
175	Poisoning by food	43	9	34
176	Poisoning by venomous animals	9	3	6
177	Other acute accidental poisonings (gas excepted)	161	84	77
178	Conflagration	91	50	41
179	Accidental burns (conflagration excepted)	612	323	289
180	Accidental mechanical suffocation	109	43	66
181	Accidental absorption of irrespirable or poisonous gas	445	352	93
182	Accidental drowning	869	366	503
183	Accidental traumatism by firearms (wounds of war excepted)	98	21	77
184	Accidental traumatism by cutting or piercing instruments	49	29	20
185	Accidental traumatism by fall	1,455	684	771
186	Accidental traumatism in mines and quarries	13	....	13
	(a) Mines	11	....	11
	(b) Quarries	2	....	2
187	Accidental traumatism by machines	130	55	75
188	Accidental traumatism by other crushing (vehicles, railways, landslides, etc.)	2,513	1,187	1,326
	(a) Railroad accidents	392	80	312
	(b) Street car accidents	145	85	60
	(c) Automobile accidents	1,629	849	780
	(d) Aeroplane and balloon accidents	11	....	11
	(e) Injuries by other vehicles	184	74	110
	(f) Landslide, other crushing	152	99	53

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Table 14—NEW YORK STATE, NEW YORK CITY, and REST OF STATE: *Deaths by causes, in accordance with the Detailed International List:* **1921 — (Concluded)**

Detailed int. list numbers[1]	CAUSES OF DEATH (Detailed International List)	New York State	New York City	Rest of State
189	Injuries by animals (not poisoning)............	44	14	30
190	Wounds of war................................	4	4	....
191	Execution of civilians by belligerent armies......	....	....	....
192	Starvation (deprivation of food and water)......	5	2	3
193	Excessive cold................................	16	2	14
194	Excessive heat................................	128	59	69
195	Lightning.....................................	15	1	14
196	Other accidental electric shocks...............	64	19	45
197–200	Homicides (total).............................	501	303	198
197	Homicide by firearms..........................	307	197	110
198	Homicide by cutting or piercing instruments.....	56	37	19
199	Homicide by other means.......................	98	59	39
200	Infanticide (murder of infants less than one year of age).................................	40	10	30
201	Fracture (cause not specified).................	50	30	20
202	Other external violence (cause specified).........	226	145	81
	(a) Legal electrocution.......................	....	[2]	11
	(b) Other....................................	....	[2]	70
203	Other external violence (cause not specified).....	38	1	37
204–205	**XV. Ill-defined diseases**......................	**196**	**119**	**77**
204	Sudden death.................................	9	....	9
205	Cause of death not specified or ill-defined........	187	119	68
	(a) Ill-defined...............................	....	....	....
	(b) Not specified or unknown..................	....	....	....

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le 15 — **STATE OF NEW YORK, NEW YORK CITY, and REST OF STATE:** *Deaths (exclusive of stillbirths), by months, according to age of decedent:* **1921**

MONTH	DEATHS AT AGE OF —										
	Under 1 year	1–4 years	5–9 years	10–14 years	15–19 years	20–29 years	30–39 years	40–49 years	50–59 years	60 years and over	Unknown
V YORK STATE..	**18,070**	**6,951**	**3,022**	**2,066**	**2,569**	**7,994**	**9,879**	**12,565**	**16,776**	**50,182**	**36**
ew York City.....	**9,548**	**4,124**	**1,668**	**1,135**	**1,383**	**4,577**	**5,702**	**7,211**	**9,235**	**19,674**	......
est of State.......	**8,522**	**2,827**	**1,354**	**931**	**1,186**	**3,417**	**4,177**	**5,354**	**7,541**	**30,508**	**36**
uary, total........	**1,678**	**773**	**263**	**176**	**243**	**679**	**926**	**1,205**	**1,607**	**4,858**	**1**
ew York City....	872	449	148	103	137	379	569	692	914	1,928	......
est of State.......	806	324	115	73	106	300	357	513	693	2,930	1
uary, total.......	**1,636**	**768**	**282**	**176**	**203**	**686**	**831**	**1,113**	**1,448**	**4,393**	**1**
ew York City....	847	464	171	89	120	423	475	652	801	1,813	......
est of State.......	789	304	111	87	83	263	356	461	647	2,580	1
ch, total.........	**1,752**	**752**	**301**	**199**	**247**	**806**	**981**	**1,239**	**1,613**	**4,868**	**8**
ew York City....	893	456	188	103	140	499	635	738	897	1,982	......
est of State.......	859	296	113	96	107	307	346	501	716	2,886	8
l, total...........	**1,507**	**660**	**256**	**156**	**195**	**749**	**878**	**1,133**	**1,452**	**4,486**	**5**
ew York City....	859	418	140	88	118	471	539	680	773	1,796	......
est of State.......	648	242	116	68	77	278	339	453	679	2,690	5
, total...........	**1,368**	**510**	**271**	**196**	**243**	**666**	**866**	**1,092**	**1,423**	**4,375**	**3**
ew York City....	724	320	153	118	141	376	475	593	798	1,708	......
est of State.......	644	190	118	78	102	290	391	499	625	2,667	3
, total...........	**1,252**	**509**	**258**	**186**	**231**	**653**	**802**	**913**	**1,275**	**3,656**	**2**
ew York City....	709	316	152	90	126	370	454	533	739	1,438	......
est of State.......	543	193	106	96	105	283	348	380	536	2,218	2
, total...........	**1,474**	**502**	**241**	**210**	**240**	**685**	**768**	**968**	**1,266**	**3,493**	**3**
ew York City....	857	301	131	111	112	350	418	519	665	1,302	......
est of State.......	617	201	110	99	128	335	350	449	601	2,191	3
ust, total.........	**1,760**	**607**	**245**	**163**	**242**	**632**	**769**	**878**	**1,238**	**3,529**	......
ew York City....	913	326	125	91	129	312	388	473	682	1,263	......
est of State......	847	281	120	72	113	320	381	405	556	2,266	......
ember, total.....	**1,618**	**509**	**234**	**156**	**217**	**599**	**664**	**895**	**1,153**	**3,423**	**4**
ew York City....	773	269	126	91	106	331	367	503	609	1,247	......
est of State.......	845	240	108	65	111	268	297	392	544	2,176	4
ober, total........	**1,402**	**443**	**224**	**161**	**174**	**619**	**795**	**956**	**1,322**	**4,142**	**1**
ew York City....	699	256	119	86	90	343	467	527	703	1,541	......
est of State.......	703	187	105	75	84	276	328	429	619	2,601	1
ember, total......	**1,253**	**423**	**226**	**138**	**161**	**608**	**784**	**1,029**	**1,453**	**4,289**	**2**
ew York City....	656	232	103	78	76	364	436	611	811	1,743	......
est of State......	597	191	123	60	85	244	348	418	642	2,546	2
ember, total......	**1,370**	**495**	**221**	**149**	**173**	**612**	**815**	**1,144**	**1,526**	**4,670**	**6**
ew York City....	746	317	112	87	88	359	479	690	843	1,913	......
est of State......	624	178	109	62	85	253	336	454	683	2,757	6

Table 16 — STATE OF NEW YORK, NEW YORK CITY, and REST OF S

MONTH	All deaths	Typhoid fever 1	Small pox 6	Measles 7	Scarlet fever 8	Whooping cough 9	Diphtheria 10	Influenza 11	Acute anterior poliomyelitis 22
NEW YORK STATE	**130,110**	**377**	1	**412**	**666**	**756**	**1,702**	**778**	**266**
New York City	**64,257**	**123**	......	**165**	**385**	**350**	**891**	**384**	**143**
Rest of State	**65,853**	**254**	1	**247**	**281**	**406**	**811**	**394**	**123**
January, total	**12,409**	**24**	......	**72**	**116**	**60**	**220**	**125**	**1**
New York City	6,191	7	......	16	73	17	118	51	1
Rest of State	6,218	17	......	56	43	43	102	74	......
February, total	**11,537**	**15**	......	**77**	**88**	**92**	**233**	**100**	**2**
New York City	5,855	3	......	17	63	32	144	42	1
Rest of State	5,682	12	......	60	25	60	89	58	1
March, total	**12,766**	**27**	1	**67**	**101**	**98**	**163**	**141**	**2**
New York City	6,531	9	......	16	62	40	111	80	1
Rest of State	6,235	18	1	51	39	58	52	61	1
April, total	**11,477**	**15**	......	**42**	**93**	**90**	**144**	**117**	**2**
New York City	5,882	6	......	16	61	33	93	56	1
Rest of State	5,595	9	......	26	32	57	51	61	1
May, total	**11,013**	**16**	......	**42**	**76**	**81**	**144**	**71**	......
New York City	5,406	9	......	25	43	35	83	39	......
Rest of State	5,607	7	......	17	33	46	61	32	......
June, total	**9,737**	**24**	......	**40**	**47**	**52**	**131**	**31**	**1**
New York City	4,927	6	......	25	30	25	69	17	1
Rest of State	4,810	18	......	15	17	27	62	14	......
July, total	**9,850**	**36**	......	**18**	**18**	**80**	**83**	**8**	**14**
New York City	4,766	20	......	12	9	50	47	7	7
Rest of State	5,084	16	......	6	9	30	36	1	7
August, total	**10,063**	**42**	......	**11**	**14**	**65**	**82**	**12**	**56**
New York City	4,702	13	......	6	6	35	31	8	21
Rest of State	5,361	29	......	5	8	30	51	4	35
September, total	**9,472**	**51**	......	**3**	**13**	**55**	**82**	**22**	**97**
New York City	4,422	21	......	2	1	28	19	12	59
Rest of State	5,050	30	......	1	12	27	63	10	38
October, total	**10,239**	**59**	......	**4**	**18**	**33**	**101**	**44**	**62**
New York City	4,831	12	......	2	7	21	43	25	35
Rest of State	5,408	47	......	2	11	12	58	19	27
November, total	**10,366**	**36**	......	**11**	**42**	**26**	**146**	**58**	**24**
New York City	5,110	10	......	9	15	17	56	27	15
Rest of State	5,256	26	......	2	27	9	90	31	9
December, total	**11,181**	**32**	......	**25**	**40**	**24**	**173**	**49**	**5**
New York City	5,634	7	......	19	15	17	77	20	1
Rest of State	5,547	25	......	6	25	7	96	29	4

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[1] Numbers under causes of death correspond to those of the 1920 revision of the detailed
national List.

[2] Acute miliary tuberculosis edited as 37c; data for New York City not available.

s (*exclusive of stillbirths*), *by months, from certain important causes:* 1921

						DISEASES OF THE CIRCULATORY SYSTEM		DISEASES OF THE RESPIRATORY SYSTEM			
Tuberculosis									PNEUMONIA		
Pulmonary and acute miliary [2] 31, 37c	Tuberculous meningitis 32	Other forms 33-37a, b	Cancer 43-49	Diabetes 57	Apoplexy and cerebral hemorrhage 74	Organic diseases of the heart 90	Arteriosclerosis 91	Bronchitis 99	Total all forms 100-101	Broncho 100	Lobar and unqualified 101
9,407	**630**	**738**	**11,163**	**2,220**	**7,148**	**22,093**	**4,655**	**1,145**	**10,645**	**4,779**	**5,866**
5,143	**383**	**396**	**5,573**	**1,120**	**886**	**12,005**	**2,699**	**547**	**6,477**	**2,900**	**3,577**
4,264	**247**	**342**	**5,590**	**1,100**	**6,262**	**10,088**	**1,956**	**598**	**4,168**	**1,879**	**2,289**
852	**61**	76	**937**	197	**703**	**2,142**	**433**	**143**	1,476	617	**859**
467	36	52	491	105	95	1,140	255	53	887	365	522
385	25	24	446	92	608	1,002	178	90	589	252	337
764	**56**	**48**	**846**	**192**	**606**	**1,979**	**393**	**152**	**1,423**	**636**	**787**
416	35	29	413	89	87	1,105	208	78	863	370	493
348	21	19	433	103	519	874	185	74	560	266	294
967	**73**	**70**	**959**	**219**	**692**	**2,071**	**407**	**145**	**1,549**	**681**	**868**
564	41	29	493	107	75	1,144	239	71	973	407	566
403	32	41	466	112	617	927	168	74	576	274	302
868	**62**	71	**925**	**202**	**658**	**2,014**	**375**	**106**	**1,133**	**498**	**635**
486	39	39	467	105	80	1,110	228	52	699	311	388
382	23	32	458	97	578	904	147	54	434	187	247
880	**67**	71	**940**	**194**	**610**	**1,923**	**398**	**95**	**850**	**366**	**484**
469	42	36	478	103	83	1,043	226	54	503	207	296
411	25	35	462	91	527	880	172	41	347	159	188
826	**46**	**65**	**910**	147	**504**	**1,668**	**370**	**56**	**524**	**222**	**302**
447	28	36	480	67	55	902	221	27	341	142	199
379	18	29	430	80	449	766	149	29	183	80	103
741	**66**	**66**	**894**	146	**519**	**1,523**	**369**	**46**	**389**	197	192
393	41	37	433	88	61	821	197	22	240	136	104
348	25	29	461	58	458	702	172	24	149	61	88
714	**55**	**61**	**925**	**197**	**504**	**1,549**	**299**	**45**	**424**	**229**	**195**
377	33	28	426	85	58	813	161	25	253	139	114
337	22	33	499	112	446	736	138	20	171	90	81
680	**29**	**59**	**913**	**149**	**495**	1,472	**347**	**63**	418	219	**199**
370	21	25	438	73	68	740	193	28	265	145	120
310	8	34	475	76	427	732	154	35	153	74	79
665	38	54	982	193	612	1,746	403	95	617	272	345
359	20	28	482	108	65	927	242	46	359	159	200
306	18	26	500	85	547	819	161	49	258	113	145
687	**36**	**44**	**965**	**180**	**590**	**1,889**	411	**94**	**827**	**362**	**465**
387	18	26	492	90	80	1,045	246	37	479	214	265
300	18	18	473	90	510	844	165	57	348	148	200
763	41	**53**	**967**	**204**	**655**	**2,117**	**450**	**105**	**1,015**	**480**	**535**
408	29	31	480	100	79	1,215	283	54	615	305	310
355	12	22	487	104	576	902	167	51	400	175	225

Table 16 — STATE OF NEW YORK: ***Deaths (exclusive of sti***

MONTH	DISEASES OF THE DIGESTIVE SYSTEM					THE PUE STA
	Diarrhea and enteritis (under 2 years) 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of the liver 122	Nephritis and Brights disease 128–129	Puerperal septicemia 146
NEW YORK STATE	**3,952**	**1,468**	**1,226**	**729**	**9,481**	**412**
New York City	**1,987**	**824**	**651**	**335**	**4,105**	**171**
Rest of State	**1,965**	**644**	**575**	**394**	**5,376**	**241**
January, total	**181**	**104**	**112**	**62**	**834**	**52**
New York City	87	59	69	29	364	20
Rest of State	94	45	43	33	470	32
February, total	**187**	**116**	**112**	**79**	**823**	**56**
New York City	82	57	63	41	355	23
Rest of State	105	59	49	38	468	33
March, total	**201**	**116**	**111**	**67**	**886**	**54**
New York City	85	58	63	34	401	24
Rest of State	116	58	48	33	485	30
April, total	**206**	**134**	**100**	**63**	**828**	**48**
New York City	111	86	54	30	382	24
Rest of State	95	48	46	33	446	24
May, total	**185**	**98**	**102**	**63**	**880**	**31**
New York City	95	52	54	31	370	14
Rest of State	90	46	48	32	510	17
June, total	**208**	**132**	**90**	**49**	**725**	**36**
New York City	133	80	55	20	300	15
Rest of State	75	52	35	29	425	21
July, total	**556**	**146**	**105**	**61**	**669**	**22**
New York City	331	87	51	28	287	7
Rest of State	225	59	54	33	382	15
August, total	**794**	**140**	**104**	**56**	**699**	**17**
New York City	423	81	54	20	288	8
Rest of State	371	59	50	36	411	9
September, total	**656**	**113**	**95**	49	644	20
New York City	280	67	48	17	270	7
Rest of State	376	46	47	32	374	13
October, total	**409**	**113**	**104**	**59**	**769**	**25**
New York City	181	52	39	25	317	9
Rest of State	228	61	65	34	452	16
November, total	**198**	**137**	**83**	**56**	**829**	**26**
New York City	95	78	44	27	370	12
Rest of State	103	59	39	29	459	14
December, total	**171**	**119**	**108**	**65**	**895**	**25**
New York City	84	67	57	33	401	8
Rest of State	87	52	51	32	494	17

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[1] Numbers under causes of death correspond to those of the 1920 revision of the detaile

onths, from certain important causes: **1921** — (Concluded)

1—

ALFORMATIONS AND DISEASES EARLY INFANCY			Old age	EXTERNAL CAUSES							All other causes
				ACCIDENTS							
al a- s	Premature birth 161-a	Congenital debility 160	164	Total accidents	Drowning 182	Railroad accidents 188-a	Automobile accidents 188-c	Other accidents 175-196 201-203	Suicide 165-171	Homicide 197-200	
504	**4,233**	**1,222**	**708**	**7,187**	**869**	**392**	**1,629**	**4,297**	**1,442**	**501**	**20,083**
72	**2,047**	**729**	**223**	**3,483**	**366**	**80**	**849**	**2,188**	**831**	**303**	**9,504**
32	**2,186**	**493**	**485**	**3,704**	**503**	**312**	**780**	**2,109**	**611**	**198**	**10,579**
156	**370**	**115**	**75**	**586**	**28**	**25**	**109**	**424**	**117**	**45**	**1,872**
74	155	72	22	321	13	9	62	237	56	25	911
82	215	43	53	265	15	16	47	187	61	20	961
144	**360**	**92**	**40**	**470**	**16**	**20**	**64**	**370**	**101**	**35**	**1,765**
65	191	47	16	268	7	7	36	218	55	19	886
79	169	45	24	202	9	13	28	152	46	16	879
148	**409**	**96**	**64**	**532**	**34**	**26**	**119**	**353**	**137**	**46**	**2,031**
55	208	59	18	289	12	7	77	193	80	29	998
93	201	37	46	243	22	19	42	160	57	17	1,033
121	**356**	**98**	**58**	**510**	**43**	**31**	**124**	**312**	**137**	**40**	**1,752**
61	197	56	15	261	28	6	67	160	80	24	865
60	159	42	43	249	15	25	57	152	57	16	887
121	**359**	**94**	**68**	**568**	**88**	**30**	**122**	**328**	**142**	**58**	**1,682**
62	173	44	23	256	39	6	58	153	83	36	785
59	186	50	45	312	49	24	64	175	59	22	897
112	**388**	**75**	**52**	**622**	**133**	**31**	**136**	**322**	**121**	**37**	**1,549**
61	199	37	20	300	45	10	77	168	76	26	771
51	189	38	32	322	88	21	59	154	45	11	778
96	**300**	**99**	**58**	**885**	**240**	**48**	**145**	**452**	**117**	**43**	**1,576**
38	148	76	14	331	72	3	64	192	66	25	731
58	152	23	44	554	168	45	81	260	51	18	845
118	**322**	**153**	**55**	**667**	**126**	**50**	**152**	**339**	**116**	**36**	**1,643**
39	128	106	13	303	66	9	68	160	59	24	729
79	194	47	42	364	60	41	84	179	57	12	914
100	**339**	**132**	**54**	**615**	**64**	**46**	**184**	**321**	**126**	**42**	**1,471**
36	160	73	14	293	32	5	93	163	69	26	651
64	179	59	40	322	32	41	91	158	57	16	820
131	**315**	**118**	**58**	**599**	**47**	**34**	**176**	**342**	**124**	**35**	**1,575**
57	152	68	17	265	26	5	83	151	78	22	715
74	163	50	41	334	21	29	93	191	46	13	860
118	**337**	**79**	**60**	**590**	**39**	**29**	**175**	**347**	**98**	**43**	**1,541**
58	157	48	24	293	20	7	85	181	62	23	704
60	180	31	36	297	19	22	90	166	36	20	837
139	**378**	**71**	**66**	**543**	**11**	**22**	**123**	**387**	**106**	**41**	**1,626**
66	179	43	27	303	6	6	79	212	67	24	758
73	199	28	39	240	5	16	44	175	39	17	868

nal List.

Table 17 — STATE OF NEW YORK (exclusive of New York City): *Births (*
age of mother, legitimacy and plural births, accordi

SEX, MONTH OF BIRTH ATTENDANT AT BIRTH, NUMBER OF CHILD IN ORDER OF BIRTH, AGE OF MOTHER, LEGITIMACY AND PLURAL BIRTHS	All births	Total	United States	Total	England, Scotland, and Wales	Ireland	Germany (excludes German Poland
State of New York (exclusive of New York City)	**105,969**	**104,942**	**73,306**	**31,614**	**1,539**	**1,488**	**1,115**
Sex:							
Males	54,709	54,175	37,881	16,282	814	800	593
Females	51,260	50,767	35,425	15,332	725	688	522
Month of birth:							
January	8,851	8,750	5,978	2,771	127	142	95
February	8,345	8,247	5,665	2,582	114	119	74
March	9,358	9,251	6,394	2,855	153	135	102
April	8,885	8,795	6,096	2,699	128	120	110
May	9,104	9,017	6,327	2,687	130	126	105
June	8,726	8,638	6,243	2,390	110	132	80
July	9,041	8,968	6,423	2,544	122	120	99
August	9,434	9,364	6,607	2,756	124	150	85
September	8,832	8,747	6,069	2,676	135	111	98
October	6,718	8,650	6,018	2,630	139	127	92
November	8,363	8,291	5,780	2,509	129	105	74
December	8,312	8,224	5,707	2,515	128	101	101
Attendant at birth:							
Physician	93,270	92,363	70,568	21,776	1,520	1,466	958
Midwife	11,922	11,823	2,442	9,380	17	20	151
Other	709	695	268	427	2	2	6
No attendant or not stated	68	61	28	31	......	......	......
Number of child in order of birth: [2]							
First child	31,336	31,017	25,513	5,495	472	316	178
Second child	21,864	21,661	16,993	4,665	347	298	195
Third child	15,975	15,836	11,232	4,601	239	264	167
Fourth child	11,237	11,139	6,964	4,175	180	204	136
Fifth child	7,916	7,836	4,347	3,489	104	139	101
Sixth child	5,592	5,544	2,799	2,744	75	103	79
Seventh child	4,064	4,024	1,951	2,072	43	59	82
Eighth child	2,863	2,827	1,252	1,574	27	55	53
Ninth child	1,894	1,872	828	1,043	17	24	43
Tenth child	1,254	1,235	518	717	18	15	30
Eleventh child	738	729	288	441	7	3	24
Twelfth child	448	440	191	249	4	2	9
Thirteenth child	252	250	120	130	2	......	8
Fourteenth child	141	140	62	78	......	......	5
Fifteenth child	69	67	33	34	1	......	3
Sixteenth child	25	25	12	13	......	......	......
Seventeenth child	13	13	4	9	......	......	......
Eighteenth child	7	7	2	5	......	......	......
Nineteenth child	5	5	......	5	......	......	......
Twentieth child or over	8	8	2	6	......	......	......
Number not stated	268	267	195	69	3	6	2
Age of mother:							
Under 15 years	37	35	33	2	......	......	1
15–19 years	8,046	7,861	6,646	1,211	49	10	21
20–24 years	27,549	27,250	21,476	5,769	288	141	125
25–29 years	30,486	30,237	21,029	9,203	402	389	215
30–34 years	21,685	21,539	13,662	7,875	369	478	303
35–39 years	13,487	13,382	7,818	5,563	322	356	283
40–44 years	4,142	4,109	2,343	1,766	103	107	141
45–49 years	395	391	212	178	4	4	23
50 years or over	17	15	9	6	1	1	......
Age not stated	125	123	78	41	1	2	3
Legitimacy:							
Legitimate	104,549	103,617	72,147	31,454	1,521	1,477	1,105
Illegitimate	1,420	1,325	1,159	160	18	11	10
Plural births:							
Twins (individuals)	2,184	2,173	1,438	735	34	41	22
Triplets (individuals)	25	22	8	14	......	......	......

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[1] Includes German, Russian, Austrian and not specified.

[2] In determining the number

stillbirths), by sex, month of birth, attendant at birth, number of child in order of birth and for white children by country of birth of mother: 1921

CHILDREN											COLORED CHILDREN			
BIRTH OF MOTHER														
Country														
Russia (excludes Russian Poland)	Russian Poland	Austria (excludes Austrian Poland)	Austrian Poland	Hungary	Poland (not specified)	Poland (total)[1]	Canada	Norway, Sweden, Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Chinese, Japanese and others
2,248	**477**	**2,262**	**354**	**646**	**5,372**	**6,240**	**2,097**	**463**	**1,434**	**22**	**1,027**	**902**	**116**	**9**
1,143	246	1,155	173	321	2,754	3,192	1,086	243	743	12	534	464	66	4
1,105	231	1,107	181	325	2,618	3,048	1,011	220	691	10	493	438	50	5
188	35	220	33	58	458	530	174	53	126	1	101	84	15	2
185	49	161	27	47	485	562	183	37	115	......	98	89	9	......
196	52	213	30	62	468	552	195	37	129	2	107	89	17	1
193	52	204	26	47	422	504	191	31	131	1	90	71	17	2
185	37	204	29	63	458	531	172	36	122	3	87	79	8	......
212	35	194	21	44	366	423	162	37	103	5	88	77	11	......
166	34	197	41	51	426	501	169	43	116	1	73	63	8	2
194	39	178	28	39	496	569	154	42	125	1	70	67	3	......
175	30	177	22	50	489	543	183	35	134	2	85	79	6	......
176	35	185	20	63	450	507	173	34	107	2	68	64	3	1
186	40	168	38	60	406	487	173	47	117	2	72	64	8	......
192	39	161	39	62	448	531	168	31	109	2	88	76	11	1
1,660	300	1,443	169	345	2,317	2,811	2,055	456	1,201	19	907	840	58	9
556	172	772	179	291	2,993	3,355	30	7	208	1	99	57	42	......
31	4	45	5	8	54	64	11	......	24	......	14	4	10	......
1	1	2	1	2	8	10	1	......	1	2	7	1	6	......
389	47	256	35	68	443	530	607	134	364	9	319	284	32	3
400	88	327	62	90	580	734	435	103	295	3	203	187	13	3
427	96	358	57	107	885	1,044	272	77	193	3	139	118	19	2
331	71	335	59	94	888	1,019	222	47	178	......	98	87	10	1
238	63	310	44	72	730	838	174	36	126	......	80	69	11	......
165	34	224	38	54	566	643	118	27	82	1	48	41	7	......
113	22	145	16	52	416	458	80	17	67	1	40	34	6	......
70	22	105	17	44	315	359	62	8	41	1	36	31	5	......
44	13	98	15	21	223	253	45	4	31	1	22	17	5	......
33	5	41	3	23	153	161	27	3	21	......	19	15	4	......
22	3	29	4	8	68	77	18	3	15	......	9	6	3	......
9	4	15	2	7	49	55	13	1	10	......	8	8	......	......
4	3	8	......	3	24	28	8	1	4	......	2	2	......	......
1	2	3	......	......	15	18	6	......	......	......	1	1	......	......
......	1	2	......	......	6	7	1	......	2	......	2	1	1	......
......	1	......	......	......	......	1	3	......	1	......	......	......	......	......
......	......	1	......	......	3	3	......	1	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	1	......	......	1	1	......	......	......	......	......	......	......
......	......	......	......	......	......	......	1	......	......	......	......	......	......	......
2	2	5	1	3	8	11	4	1	4	3	1	1	......	......
1	......	......	......	......	......	......	......	......	......	......	2	2	......	......
32	10	46	5	13	105	122	127	11	63	4	185	169	14	2
400	71	400	64	98	737	877	454	61	322	5	299	264	33	2
783	172	766	135	214	1,883	2,194	525	122	461	5	249	224	24	1
562	136	586	83	184	1,449	1,681	508	133	317	2	146	121	23	2
364	67	354	54	106	922	1,053	340	91	203	1	105	86	17	2
88	18	94	11	28	246	278	119	41	63	......	33	29	4	......
14	1	10	1	2	23	25	19	4	4	1	4	3	1	......
1	......	......	......	1	......	......	......	......	1	4	2	2	......	......
3	2	6	1	......	7	10	5	......	......	......	2	2	......	......
2,241	475	2,251	353	642	5,349	6,214	2,049	463	1,432	16	982	819	105	8
7	2	11	1	4	23	26	48	......	2	6	95	83	11	1
35	14	59	2	20	147	163	37	8	43	......	11	5	4	2
......	......	......	......	......	2	2	......	......	......	......	3	3	......	......

order of birth, previous stillbirths in some cases may have been included.

Table 18 — STATE OF NEW YORK (exclusive of New York City): *Illegitimate births (*
mother and plural births, according to color

SEX, MONTH OF BIRTH, ATTENDANT AT BIRTH, NUMBER OF CHILD IN ORDER OF BIRTH, AGE OF MOTHER AND PLURAL BIRTHS	All illegitimate births	COU						
		Total	United States	Total	England, Scotland, Wales	Ireland	Germany (excludes German Poland)	German Poland
State of New York (exclusive of New York City)	**1,420**	**1,325**	**1,159**	**160**	**18**	**11**	**10**	......
Sex:								
Males	759	700	601	91	10	7	6	......
Females	661	625	555	69	8	4	4	......
Month of birth:								
January	100	100	93	7	3	......	......	......
February	152	142	127	15	3	1	......	......
March	150	139	115	24	3	1	3	......
April	150	136	123	12	2	......	1	......
May	116	109	97	11	......	1	2	......
June	112	106	88	17	2	1	......	......
July	122	115	98	16	......	3	......	......
August	99	95	82	13	......	1	1	......
September	100	94	82	12	1	......	......	......
October	91	83	69	13	3	2	2	......
November	115	109	101	8	......	......	1	......
December	107	97	84	12	1	1	......	......
Attendant at birth:								
Physician	1,362	1,277	1,129	143	18	11	9	......
Midwife	41	33	18	15	......	......	1	......
Other	13	12	10	2	......	......	......	......
No attendant or not stated	4	3	2	......	......	......	......	......
Number of child in order of birth:								
First child	1,172	1,102	971	127	17	10	9	......
Second child	120	106	99	7	......	......	......	......
Third child	40	37	31	6	1	1	......	......
Fourth child	25	22	16	6	......	......	1	......
Fifth child	24	22	18	4	......	......	......	......
Sixth child	8	7	5	2	......	......	......	......
Seventh child	9	8	6	2	......	......	......	......
Eighth child	6	6	4	2	......	......	......	......
Ninth child	2	2	1	1	......	......	......	......
Tenth child	2	2	......	2	......	......	......	......
Eleventh child	4	3	3	......	......	......	......	......
Twelfth child	......	......	......	......	......	......	......	......
Thirteenth child	......	......	......	......	......	......	......	......
Fourteenth child	......	......	......	......	......	......	......	......
Fifteenth child	......	......	......	......	......	......	......	......
Sixteenth child	......	......	......	......	......	......	......	......
Seventeenth child	......	......	......	......	......	......	......	......
Eighteenth child	......	......	......	......	......	......	......	......
Nineteenth child	......	......	......	......	......	......	......	......
Twentieth child	......	......	......	......	......	......	......	......
Number not stated	8	8	5	1	......	......	......	......
Age of mother:								
Under 15 years	23	21	20	1	......	......	1	......
15–19 years	650	602	542	58	7	2	2	......
20–24 years	448	418	377	40	5	4	4	......
25–29 years	171	162	132	30	2	3	1	......
30–34 years	63	60	44	16	3	2	1	......
35–39 years	49	47	36	10	1	......	1	......
40–44 years	9	8	3	5	......	......	......	......
45–49 years	3	3	3	......	......	......	......	......
50 years or over	1	1	1	......	......	......	......	......
Age not stated	3	3	1	......	......	......	......	......
Plural births:								
Twins (individuals)	16	15	15	......	......	......	......	......
Triplets (individuals)	3	3	......	3	......	......	......	......

[1] Includes German, Russian, Austrian and not specified.

by sex, month of birth, attendant at birth, number of child in order of birth, age of by country of birth of mother: 1921

ER									COLORED CHILDREN			
Austria (excludes Austrian Poland	Austrian Poland	Hungary	Poland (not specified)	Poland (total)[1]	Canada	Norway, Sweden, Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Chinese, Japanese and others
11	**1**	**4**	**23**	**26**	**48**	.....	**2**	**6**	**95**	**83**	**11**	**1**
8	.....	4	12	13	29	.....	2	5	59	51	7	1
3	1	.....	11	13	19	.....	.....	1	36	32	4	.....
.....	.....	.....	1	1	2	.....	.....	.....	6	5	1	.....
1	.....	.....	4	5	3	.....	1	.....	10	9	1	.....
2	.....	.....	1	1	8	.....	1	.....	11	10	1	.....
1	.....	.....	1	1	6	.....	.....	1	14	10	3	1
2	.....	.....	2	2	2	.....	.....	1	7	7	.....	.....
.....	.....	.....	3	3	8	.....	.....	1	6	5	1	.....
.....	.....	1	5	5	5	.....	.....	1	7	6	1	.....
1	.....	2	3	3	3	.....	.....	.....	4	4	.....	.....
1	.....	.....	.....	.....	4	.....	.....	.....	6	5	1	.....
2	.....	.....	.....	.....	.....	.....	.....	1	8	8	.....	.....
.....	1	1	.....	1	5	.....	.....	.....	6	5	1	.....
1	.....	.....	3	4	2	.....	.....	1	10	9	1	.....
7	.....	1	19	21	48	.....	2	5	85	77	7	1
4	1	3	3	4	.....	.....	.....	.....	8	5	3	.....
.....	.....	.....	1	1	.....	.....	.....	.....	1	1	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	1	1	....	1	.....
8	.....	2	17	19	45	.....	.....	4	70	61	8	1
.....	.....	2	1	1	2	.....	.....	.....	14	13	1	.....
1	.....	.....	2	2	1	.....	.....	.....	3	3	.....	.....
.....	1	.....	2	3	.....	.....	1	.....	3	3	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	2	1	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2	.....	.....
2	.....	1	9	10	24	.....	.....	2	48	42	6	.....
4	.....	1	5	6	10	.....	.....	1	30	27	2	1
4	.....	1	6	6	5	.....	1	.....	9	8	1	.....
1	.....	1	.....	.....	5	.....	.....	.....	3	2	1	.....
.....	1	.....	2	3	2	.....	.....	1	2	1	1	.....
.....	.....	.....	1	1	2	.....	1	.....	1	1	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Table 19 — STATE OF NEW YORK (exclusive of New York City): *Stillbirths by*
and plural births, according to color and

SEX, MONTH OF BIRTH, ATTENDANT AT BIRTH, NUMBER OF CHILD IN ORDER OF BIRTH, AGE OF MOTHER, LEGITIMACY, AND PLURAL BIRTHS	All still-births	Total	United States	Total	England, Scotland, Wales	Ireland	Germany (excludes German Poland)	Ge ma Po lan
State of New York (exclusive of New York City)	**3,753**	**3,676**	**2,533**	**1,138**	**63**	**63**	**52**	
Sex:								
Males	2,146	2,105	1,439	664	32	41	22	
Females	1,606	1,570	1,093	474	31	22	30	
Sex unknown	1	1	1	......	......	......	......	......
Month of Birth:								
January	317	306	198	109	4	5	5	......
February	313	307	215	92	6	3	4	......
March	333	328	213	113	4	4	7	......
April	348	334	230	103	4	5	4	
May	305	302	210	92	10	2	4	......
June	320	315	227	88	4	4	6	......
July	295	289	197	92	2	10	3	
August	315	311	211	100	7	10	5	......
September	289	279	211	68	6	1	3	......
October	296	292	206	86	5	3	2	......
November	292	282	199	82	2	6	4	......
December	335	329	216	113	9	10	5	......
Attendant at birth:								
Physician	3,600	3,533	2,497	1,034	62	61	49	
Midwife	106	99	20	79	1	......	2	......
Other	9	8	4	4	......	1	......	......
No attendant	8	7	3	4	......	......	......	......
Attendant unknown	30	29	9	17	......	1	1	......
Number of child in order of birth:								
First child	1,306	1,278	1,052	224	15	22	11	......
Second child	589	571	446	125	14	13	7	......
Third child	466	460	338	122	9	6	5	......
Fourth child	314	309	196	113	6	6	5	......
Fifth child	258	255	142	113	6	4	4	......
Sixth child	186	183	87	96	3	2	3	......
Seventh child	158	154	69	85	2	5	6	......
Eighth child	135	133	56	77	2	3	2	......
Ninth child	95	91	32	59	......	......	2	......
Tenth child	69	69	27	42	2	2	4	......
Eleventh child	42	41	14	27	2	......	2	......
Twelfth child	35	35	14	21	2	......	1	
Thirteenth child	16	16	6	10	......	......	......	......
Fourteenth child	9	9	5	4	......	......	......	......
Fifteenth child	4	4	1	3	......	......	......	......
Sixteenth child	1	1	......	1	......	......	......	......
Seventeenth child	1	1	1	......	......	......	......	......
Eighteenth child	2	2	1	1	......	......	......	......
Nineteenth child	1	......	......	......	......	......	......	......
Twentieth child	1	......	......	......	......	......	......	......
Number not stated	65	64	46	15	......	......	......	......
Age of mother:								
Under 15 years	3	3	2	1	......	......	......	......
15–19 years	273	261	235	23	2	......	3	......
20–24 years	802	783	633	149	6	6	6	......
25–29 years	895	879	626	252	11	15	7	......
30–34 years	781	770	489	281	18	19	8	
35–39 years	647	635	370	265	13	14	16	......
40–44 years	282	276	130	137	11	9	12	......
45–49 years	35	35	16	19	2	......	......	......
50 years or over	......	......	......	......	......	......	......	......
Age not stated	35	34	23	8	......	......	......	......
Legitimacy:								
Legitimate	3,662	3,594	2,463	1,130	61	62	52	
Illegitimate	91	82	70	8	2	1	......	......
Plural births:								
Twins (individuals)	164	161	124	37	......	1	......	......
Triplets (individuals)	5	5	1	4	......	......	......	......

N. B. This table contains only those stillbirths (3,753) which were reported on birth certif
report. The difference (189) represents those which were reported on death certificates only

ttendant at birth, number of child in order of birth, age of mother, legitimacy y country of birth of mother: **1921**

OTHER										COLORED CHILDREN			
- n - d	Austria (excludes Austrian Poland	Austrian Poland)	Hungary	Poland (not specified)[1]	Poland (total)[1]	Canada	Norway, Sweden, Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Chinese, Japanese and others
17	75	4	21	172	195	81	11	49	5	77	70	7	......
12	40	2	14	98	113	44	4	30	2	41	37	4	......
5	35	2	7	74	82	37	7	19	3	36	33	3	......
..	......	......	......	......	......	......	......	......	......	......	......	......	......
1	8	......	5	18	19	10	......	6	1	9	9	......	......
1	10	1	1	12	14	4	......	3	......	6	6	......	......
2	9	1	2	17	20	88	2	7	2	5	5	......	......
1	8	1	4	13	16	6	2	5	1	9	7	2	......
2	8	......	1	14	16	6	2	4	......	3	2	1	......
2	7	......	1	10	12	5	1	4	......	5	5	......	......
1	3	......	1	15	17	5	......	3	......	6	5	1	......
1	6	......	2	11	12	12	1	4	......	4	4	......	......
1	2	......	......	16	17	2	......	2	......	10	10	......	......
1	5	1	......	14	16	5	......	2	......	4	4	......	......
2	4	......	1	13	15	9	1	4	1	10	9	1	......
2	5	......	3	19	21	9	2	5	......	6	4	2	......
12	65	3	19	147	164	81	11	49	2	67	62	5	......
5	7	......	2	18	23	......	......	......	......	7	5	2	......
..	......	......	......	......	......	......	......	......	......	1	1	......	......
..	......	......	......	......	......	......	......	......	......	1	1	......	......
..	3	1	......	7	8	......	......	......	3	1	1	......	......
2	9		3	19	22	29	4	12	2	28	25	3	......
3	4	......	1	11	14	13	2	6	......	18	17	1	......
2	8	......	2	24	26	9	1	6	......	6	6	......	......
1	11	......	3	23	24	10	......	5	......	5	5	......	......
4	8	......	3	16	20	3	1	10	......	3	3	......	......
1	7	......	3	27	28	1	......	3	......	3	3	......	......
1	6	......	......	16	17	5	......	2	......	4	3	1	......
1	2	1	1	9	12	4	......	4	......	2	2	......	......
1	6	2	......	8	11	3	1	1	......	4	2	2	......
..	4	......	2	9	9	1	......	......	......	......	......	......	......
..	2	......	1	4	4	......	......	......	......	1	1	......	......
..	3	......	1	4	5	......	......	......	......	......	......	......	......
..	2	......	......	2	2	......	......	......	......	......	......	......	......
..	......	......	......	......	......	......	......	......	......	......	......	......	......
..	......	......	......	......	......	1	......	......	......	......	......	......	......
..	......	......	......	......	......	1	......	......	......	......	......	......	......
..	......	......	......	......	......	......	......	......	......	......	......	......	......
..	......	......	......	......	......	......	......	......	......	......	......	......	......
..	......	......	......	......	......	......	......	......	......	1	1	......	......
..	......	......	......	......	......	......	......	......	......	1	1	......	......
1	3	......	1	......	1	1	2	......	3	1	1	......	......
..	......	......	......	......	......	......	......	......	......	......	......	......	......
..	......	......	......	......	......	1	......	3	......	12	10	2	......
1	8	......	2	16	17	22	2	9	1	19	18	1	......
2	18	......	6	52	54	15	3	17	1	16	15	1	......
6	21	2	6	47	57	21	1	4	......	11	9	2	......
4	15	2	5	41	47	9	5	13	......	12	11	1	......
3	13	......	......	13	16	9	......	3	......	6	6	......	......
..	......	......	1	2	2	3	......	......	......	......	......	......	......
..	......	......	......	......	......	......	......	......	......	......	......	......	......
1	......	......	1	1	2	1	......	......	3	1	1	......	......
16	74	4	21	171	193	80	11	49	1	68	63	5	......
1	1	......	......	1	2	1	......	......	4	9	7	2	......
..	3	......	2	3	3	3	......	5	......	3	3	......	......
..	......	......	......	1	1	......	......	......	......	......	......	......	......

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er of stillbirths which occurred during the year, was 3,942 as shown in other tables in this th and death certificates. [1] Includes German, Russian, Austrian and not specified.

Table 20 — STATE OF NEW YORK *(exclusive of New York City)*: *Births (excl*
atten

AREA	All births	SEX		LEGITI
		Male	Female	Legitimate
State of New York (exclusive of New York City)	**105,969**	**54,709**	**51,260**	**104,549**
Urban	**60,809**	**31,345**	**29,464**	**59,870**
Rural [1]	**45,160**	**23,364**	**21,796**	**44,679**
ALBANY COUNTY	**3,678**	**1,863**	**1,815**	**3,621**
Albany	2,352	1,172	1,180	2,308
Cohoes	464	230	234	459
Watervliet	282	163	119	281
Rest of county	580	298	282	573
ALLEGANY COUNTY	**697**	**385**	**312**	**695**
BROOME COUNTY	**2,831**	**1,463**	**1,368**	**2,789**
Binghamton	1,514	791	723	1,479
Rest of county	1,317	672	645	1,310
CATTARAUGUS COUNTY	**1,668**	**868**	**800**	**1,657**
Olean	594	295	299	590
Salamanca	241	132	109	239
Rest of county	833	441	392	828
CAYUGA COUNTY	**1,268**	**651**	**617**	**1,255**
Auburn	808	426	382	800
Rest of county	460	225	235	455
CHAUTAUQUA COUNTY	**2,536**	**1,309**	**1,227**	**2,521**
Dunkirk	504	260	244	501
Jamestown	866	448	418	860
Rest of county	1,166	601	565	1,160
CHEMUNG COUNTY	**1,452**	**749**	**703**	**1,438**
Elmira	1,120	585	535	1,111
Rest of county	332	164	168	327
CHENANGO COUNTY	**650**	**327**	**323**	**646**
Norwich	184	87	97	182
Rest of county	466	240	226	464
CLINTON COUNTY	**1,187**	**589**	**598**	**1,170**
Plattsburgh	311	158	153	303
Rest of county	876	431	445	867
COLUMBIA COUNTY	**700**	**368**	**332**	**686**
Hudson	333	185	148	326
Rest of county	367	183	184	360
CORTLAND COUNTY	**642**	**319**	**323**	**637**
Cortland	334	163	171	329
Rest of county	308	156	152	308
DELAWARE COUNTY	**909**	**472**	**437**	**899**
DUTCHESS COUNTY	**1,677**	**896**	**781**	**1,658**
Beacon	199	111	88	198
Poughkeepsie	736	381	355	727
Rest of county	742	404	338	733
ERIE COUNTY	**16,500**	**8,537**	**7,963**	**16,127**
Buffalo	13,232	6,856	6,376	12,945
Lackawanna [2]	654	331	323	652
Our Lady of Victory Infant Home	261	140	121	194
Tonawanda	244	134	110	241
Rest of county	2,109	1,076	1,033	2,095
ESSEX COUNTY	**797**	**430**	**367**	**786**
FRANKLIN COUNTY	**1,136**	**592**	**544**	**1,116**

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[1] "Rural" as used in this table, includes all territory outside of the cities and three larg

births), by counties according to sex, legitimacy, single and plural births and
h: 1921

AREA	SINGLE AND PLURAL BIRTHS			ATTENDANT AT BIRTH			
	Single births	Number of twins	Number of triplets	Physician	Midwife	Other	No attendant or not stated
of New York (exclusive of New York City)	**103,760**	**2,184**	**25**	**93,270**	**11,922**	**709**	**68**
Urban	**59,607**	**1,184**	**18**	**50,559**	**9,923**	**292**	**35**
Rural	**44,153**	**1,000**	**7**	**42,711**	**1,999**	**417**	**33**
ANY COUNTY	**3,589**	**89**	......	**3,117**	**537**	**18**	**6**
bany	2,287	65	......	2,048	300	4	......
hoes	462	2	......	356	96	7	5
atervliet	278	4	......	210	71	......	1
Rest of county	562	18	......	503	70	7	......
GANY COUNTY	**679**	**18**	......	**682**	**9**	**6**	......
OME COUNTY	**2,776**	**55**	......	**2,481**	**341**	**7**	**2**
nghamton	1,496	18	......	1,266	243	3	2
Rest of county	1,280	37	......	1,215	98	4	......
TARAUGUS COUNTY	**1,622**	**46**	......	**1,609**	**43**	**16**	......
ean	578	16	......	552	37	5	......
lamanca	231	10	......	238	2	1	......
Rest of county	813	20	......	819	4	10	......
UGA COUNTY	**1,248**	**17**	**3**	**1,145**	**106**	**15**	**2**
burn	798	10	......	689	104	13	2
Rest of County	450	7	3	456	2	2	......
TUAUQUA COUNTY	**2,477**	**59**	......	**2,302**	**218**	**15**	**1**
nkirk	494	10	......	363	141	......	......
mestown	844	22	......	805	55	6	......
Rest of county	1,139	27	......	1,134	22	9	1
MUNG COUNTY	**1,429**	**23**	......	**1,371**	**73**	**8**	......
mira	1,101	19	......	1,063	56	1	......
Rest of county	328	4	......	308	17	7	......
NANGO COUNTY	**634**	**16**	......	**642**	**3**	**5**	......
rwich	178	6	......	184	......	......	......
Rest of county	456	10	......	458	3	5	......
TON COUNTY	**1,159**	**25**	**3**	**1,168**	**4**	**11**	**4**
attsburgh	302	6	3	308	......	3	......
Rest of county	857	19	......	860	4	8	4
UMBIA COUNTY	**687**	**13**	......	**616**	**69**	**15**	......
dson	329	4	......	261	62	10	......
Rest of county	358	9	......	355	7	5	......
TLAND COUNTY	**632**	**10**	......	**587**	**54**	**1**	......
rtland	332	2	......	280	54	......	......
Rest of county	300	8	......	307	......	1	......
AWARE COUNTY	**893**	**16**	......	**894**	**5**	**8**	**2**
CHESS COUNTY	**1,646**	**31**	......	**1,386**	**280**	**10**	**1**
acon	109	......	......	153	46	......	......
ughkeepsie	727	9	......	531	205	......	......
Rest of county	720	22	......	702	29	10	1
COUNTY	**16,168**	**327**	**5**	**12,531**	**3,919**	**40**	**10**
ffalo	12,970	259	3	9,915	3,292	21	4
ckawanna [2]	640	14	......	309	335	6	4
Our Lady of Victory Infant Home	259	2	......	261	......	......	......
nawanda	239	5	......	236	7	1	......
Rest of county	2,060	47	2	1,810	285	12	2
x COUNTY	**775**	**22**	......	**783**	**5**	**6**	**3**
KLIN COUNTY	**1,116**	**20**	......	**1,045**	**81**	**10**	......

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[2] Excludes Our Lady of Victory Infant Home, Lackawanna.

Table 20 — STATE OF NEW YORK (exclusive of New York City): *Births (excl*
at birt

AREA	All births	SEX		LEGITI
		Males	Females	Legitimate
FULTON COUNTY	**843**	**444**	**399**	**828**
Gloversville	466	244	222	461
Johnstown	156	87	69	155
Rest of county	221	113	108	212
GENESEE COUNTY	**849**	**441**	**408**	**843**
Batavia	384	200	184	381
Rest of county	465	241	224	462
GREENE COUNTY	**486**	**259**	**227**	**482**
HAMILTON COUNTY	**58**	**24**	**34**	**57**
HERKIMER COUNTY	**1,542**	**798**	**744**	**1,533**
Little Falls	381	212	169	376
Rest of county	1,161	586	575	1,157
JEFFERSON COUNTY	**1,852**	**917**	**935**	**1,827**
Watertown	800	390	410	789
Rest of county	1,052	527	525	1,038
LEWIS COUNTY	**537**	**270**	**267**	**530**
LIVINGSTON COUNTY	**798**	**409**	**389**	**794**
MADISON COUNTY	**869**	**445**	**424**	**859**
Oneida	292	157	135	288
Rest of county	577	288	289	571
MONROE COUNTY	**7,844**	**4,021**	**3,823**	**7,751**
Rochester	6,826	3,460	3,366	6,736
Rest of county	1,018	561	457	1,015
MONTGOMERY COUNTY	**1,248**	**661**	**587**	**1,237**
Amsterdam	821	437	384	812
Rest of county	427	224	203	425
NASSAU COUNTY	**2,851**	**1,483**	**1,368**	**2,829**
Glen Cove	244	127	117	242
Rest of county	2,607	1,356	1,251	2,587
NIAGARA COUNTY	**2,942**	**1,546**	**1,396**	**2,917**
Lockport	441	223	218	436
Niagara Falls	1,500	785	715	1,488
North Tonawanda	376	192	184	375
Rest of county	625	346	279	618
ONEIDA COUNTY	**4,390**	**2,300**	**2,090**	**4,339**
Rome	712	362	350	700
Utica	2,525	1,336	1,189	2,498
Sherrill	25	10	15	25
Rest of county	1,128	592	536	1,116
ONONDAGA COUNTY	**5,746**	**2,962**	**2,784**	**5,659**
Syracuse	4,357	2,233	2,124	4,283
Rest of county	1,389	729	660	1,376
ONTARIO COUNTY	**1,154**	**582**	**572**	**1,136**
Canandaigua	242	116	126	236
Geneva	394	196	198	386
Rest of county	518	270	248	514
ORANGE COUNTY	**2,486**	**1,301**	**1,185**	**2,466**
Middletown	354	174	180	349
Newburgh	614	326	288	611
Port Jervis	264	142	122	264
Rest of county	1,254	659	595	1,242

***stillbirths), by counties, according to sex, legitimacy, single and plural births and attendant* — (Continued)**

AREA	SINGLE AND PLURAL BIRTHS			ATTENDANT AT BIRTH			
	Single births	Number of twins	Number of triplets	Physician	Midwife	Other	No attendant or not stated
FULTON COUNTY	821	22	......	830	3	10	....
Gloversville	448	18	......	465	1	......	....
Johnstown	154	2	......	154	......	2	....
Rest of county	219	2	......	211	2	8	....
GENESEE COUNTY	820	26	3	840	......	6	3
Batavia	367	14	3	384	......	......	....
Rest of county	453	12	......	456	......	6	3
GREENE COUNTY	478	8	......	480	4	2	....
HAMILTON COUNTY	58	......	......	57	......	1	....
HERKIMER COUNTY	1,508	34	......	1,347	178	17	....
Little Falls	377	4	......	296	85	......	....
Rest of county	1,131	30	......	1,051	93	17	....
JEFFERSON COUNTY	1,782	70	......	1,833	5	14	....
Watertown	768	32	......	793	1	6	....
Rest of county	1,014	38	......	1,040	4	8	....
LEWIS COUNTY	521	16	......	516	4	15	2
LIVINGSTON COUNTY	790	8	......	768	25	5	....
MADISON COUNTY	850	19	......	862	1	4	2
Oneida	286	6	......	291	1	......	....
Rest of county	564	13	......	571	......	4	2
MONROE COUNTY	7,693	148	3	7,149	573	119	3
Rochester	6,696	127	3	6,147	564	112	3
Rest of county	997	21	......	1,002	9	7	....
MONTGOMERY COUNTY	1,228	20	......	1,020	218	8	2
Amsterdam	807	14	......	602	214	4	1
Rest of county	421	6	......	418	4	4	1
NASSAU COUNTY	2,794	57	......	2,544	293	11	3
Glen Cove	234	10	......	167	71	3	3
Rest of county	2,560	47	......	2,377	222	8	....
NIAGARA COUNTY	2,889	53	......	2,450	477	15	....
Lockport	436	5	......	432	7	2	....
Niagara Falls	1,468	32	......	1,178	311	11	....
North Tonawanda	372	4	......	220	156	......	....
Rest of county	613	12	......	620	3	2	....
ONEIDA COUNTY	4,290	97	3	3,269	1,096	24	1
Rome	701	8	3	483	225	4	....
Utica	2,467	58	......	1,754	764	7	....
Sherrill	25	......	......	25	......	......	....
Rest of county	1,097	31	......	1,007	107	13	1
ONONDAGA COUNTY	5,620	126	......	5,305	404	33	4
Syracuse	4,273	84	......	4,043	302	8	4
Rest of county	1,347	42	......	1,262	102	25	....
ONTARIO COUNTY	1,130	21	3	1,149	......	5	....
Canandaigua	235	7	......	242	......	......	....
Geneva	387	4	3	391	......	3	....
Rest of county	508	10	......	516	......	2	....
ORANGE COUNTY	2,423	63	......	2,355	106	23	2
Middletown	342	12	......	352	......	2	....
Newburgh	606	8	......	557	55	2	....
Port Jervis	262	2	......	257	1	6	....
Rest of county	1,213	41	......	1,189	50	13	2

Table 20 — STATE OF NEW YORK (*exclusive of New York City*: *Births* (*exclu*
attendant at

AREA	All births	SEX		LEGITIMA	
		Males	Females	Legitimate	I
ORLEANS COUNTY	**637**	**318**	**319**	**628**	
OSWEGO COUNTY	1,612	**806**	**806**	**1,597**	
Fulton	309	158	151	305	
Oswego	562	288	274	558	
Rest of county	741	360	381	734	
OTSEGO COUNTY	**827**	**422**	**405**	**816**	
Oneonta	236	119	117	236	..
Rest of county	591	303	288	580	
PUTNAM COUNTY	**214**	**118**	**96**	**213**	
RENSSELAER COUNTY	**2,031**	1,018	1,013	1,976	
Rensselaer	158	81	77	157	
Troy	1,435	704	731	1,391	
Rest of county	438	233	205	428	
ROCKLAND COUNTY	**906**	**483**	**423**	**888**	
ST. LAWRENCE COUNTY	2,037	1,045	**992**	2,014	
Ogdensburg	404	206	198	399	
Rest of county	1,633	839	794	1,615	
SARATOGA COUNTY	1,145	**597**	**548**	1,139	
Saratoga Springs	275	158	117	273	
Mechanicville	174	79	95	174	..
Rest of county	696	360	336	692	
SCHENECTADY COUNTY	2,220	1,161	1,059	2,209	
Schenectady	1,841	955	886	1,831	
Rest of county	379	206	173	378	
SCHOHARIE COUNTY	**375**	**191**	**184**	**369**	
SCHUYLER COUNTY	**269**	**137**	**132**	**266**	
SENECA COUNTY	**412**	**206**	**206**	**408**	
STEUBEN COUNTY	1,734	**895**	**839**	1,713	
Corning	431	220	211	422	
Hornell	314	151	163	312	
Rest of county	989	524	465	979	
SUFFOLK COUNTY	2,325	1,152	1,173	2,294	
SULLIVAN COUNTY	**591**	**318**	**278**	**586**	
TIOGA COUNTY	**482**	**250**	**232**	**460**	
TOMPKINS COUNTY	**729**	**366**	**363**	**722**	
Ithaca	416	217	199	412	
Rest of county	313	149	164	310	
ULSTER COUNTY	1,438	**770**	**668**	1,423	
Kingston	565	310	255	561	
Rest of county	873	460	413	862	
WARREN COUNTY	**666**	**337**	**329**	**660**	
Glens Falls	375	193	182	372	
Rest of county	291	144	147	288	
WASHINGTON COUNTY	**858**	**447**	**411**	**849**	
WAYNE COUNTY	**882**	**436**	**446**	**871**	
WESTCHESTER COUNTY	7,803	4,062	3,741	7,713	
Peekskill	306	149	157	301	
White Plains	455	239	216	447	
Mt. Vernon	1,034	536	498	1,030	

stillbirths), by counties, according to sex, legitimacy, single and plural births and **1921 — (Continued)**

AREA	SINGLE AND PLURAL BIRTHS			ATTENDANT AT BIRTH			
	Single births	Number of twins	Number of triplets	Physician	Midwife	Other	No attendant or not stated
ORLEANS COUNTY	**633**	**4**	....	**625**	**8**	**4**	....
OSWEGO COUNTY	**1,581**	**31**	....	**1,571**	**31**	**10**	....
Fulton	305	4	....	307	....	2	....
Oswego	542	20	....	534	25	3	....
Rest of county	734	7	....	730	6	5	....
OTSEGO COUNTY	**811**	**16**	....	**819**	**5**	**3**	....
Oneonta	234	2	....	236	....	....	....
Rest of county	577	14	....	583	5	3	....
PUTNAM COUNTY	**206**	**8**	....	**213**	**1**	....	....
RENSSELAER COUNTY	**1,999**	**32**	....	**1,869**	**157**	**5**	....
Rensselaer	152	6	....	143	14	1	....
Troy	1,421	14	....	1,290	143	2	....
Rest of county	426	12	....	436	....	2	....
ROCKLAND COUNTY	**890**	**16**	....	**854**	**49**	**3**	....
ST. LAWRENCE COUNTY	**1,989**	**46**	**2**	**1,976**	**49**	**12**	....
Ogdensburg	392	12	....	404	....	....	....
Rest of county	1,597	34	2	1,572	49	12	....
SARATOGA COUNTY	**1,130**	**15**	....	**1,056**	**70**	**19**	....
Saratoga Springs	271	4	....	243	32	....	....
Mechanicville	171	3	....	171	....	3	....
Rest of county	688	8	....	642	38	16	....
SCHENECTADY COUNTY	**2,171**	**49**	....	**1,658**	**551**	**10**	**1**
Schenectady	1,800	41	....	1,323	509	8	1
Rest of county	371	8	....	335	42	2	....
SCHOHARIE COUNTY	**366**	**9**	....	**366**	....	**8**	**1**
SCHUYLER COUNTY	**267**	**2**	....	**267**	**1**	**1**	....
SENECA COUNTY	**405**	**7**	....	**401**	**1**	**9**	**1**
STEUBEN COUNTY	**1,706**	**28**	....	**1,726**	**2**	**4**	**2**
Corning	425	6	....	430	....	....	1
Hornell	312	2	....	312	1	....	1
Rest of county	969	20	....	984	1	4	....
SUFFOLK COUNTY	**2,273**	**52**	....	**2,215**	**101**	**9**	....
SULLIVAN COUNTY	**573**	**18**	....	**544**	**34**	**13**	....
TIOGA COUNTY	**470**	**12**	....	**478**	**1**	**3**	....
TOMPKINS COUNTY	**717**	**12**	....	**716**	**1**	**11**	**1**
Ithaca	406	10	....	415	1	....	....
Rest of county	311	2	....	301	....	11	1
ULSTER COUNTY	**1,400**	**38**	....	**1,398**	**10**	**29**	**1**
Kingston	555	10	....	553	....	12	....
Rest of county	845	28	....	845	10	17	1
WARREN COUNTY	**654**	**12**	....	**659**	**3**	**4**	....
Glens Falls	373	2	....	374	....	1	....
Rest of county	281	10	....	285	3	3	....
WASHINGTON COUNTY	**840**	**18**	....	**822**	**20**	**14**	**2**
WAYNE COUNTY	**862**	**20**	....	**865**	**14**	**3**	....
WESTCHESTER COUNTY	**7,656**	**147**	....	**6,089**	**1,679**	**29**	**6**
Peekskill	302	4	....	287	19	....	....
White Plains	447	8	....	382	71	2	....
Mt. Vernon	1,008	26	....	785	248	1	....

Table 20 — STATE OF NEW YORK (exclusive of New York city): *Births (exclusive of*
at birth: 1921

AREA	All births	Sex		Legitimacy	
		Males	Females	Legitimate	Illegitimate
WESTCHESTER Co. — (*Concluded*)					
New Rochelle	737	386	351	724	13
Ossining	270	142	128	270	....
Portchester	575	302	273	571	4
Yonkers	2,530	1,295	1,235	2,508	22
Rest of county	1,896	1,013	883	1,862	34
WYOMING COUNTY	**663**	**357**	**306**	**660**	**3**
YATES COUNTY	**290**	**141**	**149**	**287**	**3**

hs), by counties, according to sex, legitimacy, single and plural births and attendant
ncluded)

AREA	SINGLE AND PLURAL BIRTHS			ATTENDANT AT BIRTH			
	Single births	Number of twins	Number of triplets	Physician	Midwife	Other	No attendant or not stated
Rochelle	714	23	......	598	139	......	....
ing	266	4	......	249	21	......	....
hester	562	13	......	350	224	1	....
ers	2,494	36	......	1,912	612	3	3
t of county	1,863	33	......	1,526	345	22	3
NG COUNTY	649	14	......	662	......	1	....
COUNTY	287	3	......	288	......	2	....

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Table 21 — STATE OF NEW YORK (exclusive of New York city):

AREA	All births	MONTH OF BIRTH			
		Jan.	Feb.	Mar.	April
State of New York (exclusive of New York City	**105,969**	**8,851**	**8,345**	**9,358**	**8,885**
Urban	**60,809**	**5,225**	**4,936**	**5,411**	**5,074**
Rural [1]	**45,160**	**3,626**	**3,409**	**3,947**	**3,811**
ALBANY COUNTY	**3,678**	**315**	**293**	**331**	**347**
Albany	2,352	197	192	215	217
Cohoes	464	55	30	37	56
Watervliet	282	23	28	25	16
Rest of county	580	40	43	54	58
ALLEGANY COUNTY	**697**	**45**	**64**	**58**	**63**
BROOME COUNTY	**2,831**	**233**	**212**	**249**	**235**
Binghamton	1,514	134	107	133	115
Rest of county	1,317	99	105	116	120
CATTARAUGUS COUNTY	**1,668**	**132**	**122**	**153**	**117**
Olean	594	50	54	61	34
Salamanca	241	25	17	25	18
Rest of county	833	57	51	67	65
CAYUGA COUNTY	**1,268**	**107**	**107**	**126**	**100**
Auburn	808	64	73	80	69
Rest of county	460	43	34	46	31
CHAUTAUQUA COUNTY	**2,536**	**223**	**200**	**223**	**209**
Dunkirk	504	38	55	46	44
Jamestown	866	87	62	73	73
Rest of county	1,166	98	83	104	92
CHEMUNG COUNTY	**1,452**	**127**	**110**	**119**	**129**
Elmira	1,120	92	93	84	110
Rest of county	332	35	17	35	19
CHENANGO COUNTY	**650**	**58**	**53**	**57**	**54**
Norwich	184	18	15	24	16
Rest of county	466	40	38	33	38
CLINTON COUNTY	**1,187**	**84**	**74**	**113**	**97**
Plattsburgh	311	27	22	20	25
Rest of county	876	57	52	93	72
COLUMBIA COUNTY	**700**	**68**	**53**	**46**	**58**
Hudson	333	35	20	25	27
Rest of county	367	33	33	21	31
CORTLAND COUNTY	**642**	**44**	**64**	**53**	**57**
Cortland	334	29	31	25	26
Rest of county	308	15	33	28	31
DELAWARE COUNTY	**909**	**83**	**72**	**85**	**85**
DUTCHESS COUNTY	**1,677**	**137**	**131**	**148**	**149**
Beacon	199	19	19	15	15
Poughkeepsie	736	59	62	70	74
Rest of county	742	59	50	63	60
ERIE COUNTY	**16,500**	**1,373**	**1,388**	**1,482**	**1,310**
Buffalo	13,232	1,130	1,127	1,171	1,052
Lackawanna [2]	654	61	55	67	45
Our Lady of Victory Infant Home	261	17	22	23	22
Tonawanda	244	19	16	20	16
Rest of county	2,109	146	168	201	175
ESSEX COUNTY	**797**	**62**	**66**	**82**	**76**
FRANKLIN COUNTY	**1,136**	**80**	**77**	**96**	**106**

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[1] Rural as used in this table, includes all territory outside of the cities and three large vi

(exclusive of stillbirths), by counties, according to month of birth: 1921

AREA	MONTH OF BIRTH						
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
New York State (exclusive of New York City)	8,726	9,041	9,434	8,832	8,718	8,363	8,312
Urban	4,935	5,163	5,395	5,016	4,976	4,708	4,751
Rural	3,791	3,878	4,039	3,816	3,742	3,655	3,561
ALBANY COUNTY	308	309	315	286	280	291	322
Albany	189	201	209	186	183	189	192
Cohoes	42	43	34	38	30	28	43
Watervliet	21	21	26	28	24	23	28
Rest of county	56	44	46	34	43	51	59
ALLEGANY COUNTY	65	62	52	64	57	61	57
BROOME COUNTY	235	228	265	203	254	221	230
Binghamton	124	114	152	109	146	121	113
Rest of county	111	114	113	94	108	100	117
CATTARAUGUS COUNTY	141	186	147	136	146	126	124
Olean	58	59	50	52	46	50	36
Salamanca	12	16	19	20	22	19	25
Rest of county	71	111	78	64	78	57	63
CAYUGA COUNTY	117	105	115	109	106	94	82
Auburn	74	69	71	64	66	52	59
Rest of county	43	36	44	45	40	42	23
CHAUTAUQUA COUNTY	204	207	215	225	213	205	185
Dunkirk	40	41	47	39	36	37	36
Jamestown	65	71	72	82	77	65	61
Rest of county	99	95	96	104	100	103	88
CHEMUNG COUNTY	122	129	140	116	136	120	96
Elmira	92	99	114	86	106	88	72
Rest of county	30	30	26	30	30	32	24
CHENANGO COUNTY	59	51	55	62	45	57	45
Norwich	23	11	13	15	8	23	10
Rest of county	36	40	42	47	37	34	35
CLINTON COUNTY	103	103	113	117	87	100	83
Plattsburgh	28	28	32	29	21	26	16
Rest of county	75	75	81	88	66	74	67
COLUMBIA COUNTY	49	61	73	62	58	60	42
Hudson	26	34	31	22	29	29	18
Rest of county	23	27	42	40	29	31	24
CORTLAND COUNTY	42	48	68	50	57	57	57
Cortland	22	23	39	26	32	27	33
Rest of county	20	25	29	24	25	30	24
DELAWARE COUNTY	79	65	76	97	74	55	68
DUTCHESS COUNTY	141	127	156	134	160	121	112
Beacon	14	16	12	19	24	10	16
Poughkeepsie	56	57	77	50	57	55	48
Rest of county	71	54	67	65	79	56	48
ERIE COUNTY	1,330	1,403	1,453	1,430	1,290	1,315	1,314
Buffalo	1,064	1,142	1,171	1,140	1,015	1,031	1,073
Lackawanna [2]	43	51	52	64	51	62	53
Our Lady of Victory Infant Home	21	18	16	16	27	25	34
Tonawanda	19	24	18	23	21	21	24
Rest of county	183	168	196	187	176	176	130
ESSEX COUNTY	52	65	59	68	60	57	68
FRANKLIN COUNTY	98	99	96	98	111	97	73

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listed.

[2] Excludes Our Lady of Victory Infant Home, Lackawanna.

Table 21 — STATE OF NEW YORK (exclusive of New York City):

AREA	All births	MONTH OF BIRTH		
		Jan.	Feb.	Mar.
FULTON COUNTY	843	72	66	69
Gloversville	466	42	40	41
Johnstown	156	17	13	8
Rest of county	221	13	13	20
GENESEE COUNTY	849	61	69	78
Batavia	384	34	25	39
Rest of county	465	27	44	39
GREENE COUNTY	486	31	28	43
HAMILTON COUNTY	58	3	6	1
HERKIMER COUNTY	1,542	139	116	147
Little Falls	381	38	35	33
Rest of county	1,161	101	81	114
JEFFERSON COUNTY	1,852	168	161	168
Watertown	800	86	77	78
Rest of county	1,052	82	84	90
LEWIS COUNTY	537	41	47	43
LIVINGSTON COUNTY	798	69	71	74
MADISON COUNTY	869	61	61	76
Oneida	292	18	22	33
Rest of county	577	43	39	43
MONROE COUNTY	7,844	668	649	716
Rochester	6,826	588	567	621
Rest of county	1,018	80	82	95
MONTGOMERY COUNTY	1,248	107	89	102
Amsterdam	821	76	58	67
Rest of county	427	31	31	35
NASSAU COUNTY	2,851	232	202	257
Glen Cove	244	28	17	25
Rest of county	2,607	204	185	232
NIAGARA COUNTY	2,942	246	232	284
Lockport	441	24	38	42
Niagara Falls	1,500	133	118	152
North Tonawanda	376	33	32	26
Rest of county	625	56	44	64
ONEIDA COUNTY	4,390	371	343	391
Rome	712	71	50	70
Utica	2,525	211	194	210
Sherrill	25	2	....	2
Rest of county	1,128	87	99	109
ONONDAGA COUNTY	5,746	475	456	540
Syracuse	4,357	351	349	418
Rest of county	1,389	124	107	122
ONTARIO COUNTY	1,154	107	94	99
Canandaigua	242	21	22	21
Geneva	394	31	30	38
Rest of county	518	55	42	40
ORANGE COUNTY	2,486	195	184	241
Middletown	354	19	34	26
Newburgh	614	49	55	55
Port Jervis	264	34	15	24
Rest of county	1,254	93	80	136
ORLEANS COUNTY	637	53	55	55

sive of stillbirths), by counties, according to month of birth: 1921 — (Continued)

AREA	MONTH OF BIRTH						
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
FULTON COUNTY	**71**	**60**	**70**	**69**	**71**	**77**	**53**
Gloversville	34	34	35	34	38	38	36
Johnstown	22	10	13	12	14	17	7
Rest of county	15	16	22	23	19	22	10
GENESEE COUNTY	**63**	**70**	**86**	**67**	**77**	**65**	**71**
Batavia	27	34	35	30	36	26	27
Rest of county	36	36	51	37	41	39	44
GREENE COUNTY	**45**	**47**	**55**	**41**	**52**	**46**	**22**
HAMILTON COUNTY	**4**	**5**	**5**	**9**	**5**	**6**	**7**
HERKIMER COUNTY	**131**	**125**	**123**	**105**	**137**	**122**	**139**
Little Falls	25	34	31	33	28	26	31
Rest of county	106	91	92	72	109	96	108
JEFFERSON COUNTY	**148**	**138**	**163**	**167**	**147**	**148**	**129**
Watertown	58	58	63	65	69	57	48
Rest of county	90	80	100	102	78	91	81
LEWIS COUNTY	**45**	**54**	**41**	**46**	**46**	**38**	**34**
LIVINGSTON COUNTY	**71**	**62**	**69**	**54**	**54**	**67**	**57**
MADISON COUNTY	**73**	**89**	**82**	**78**	**72**	**54**	**65**
Oneida	29	29	28	22	22	16	18
Rest of county	44	60	54	56	50	38	47
MONROE COUNTY	**615**	**679**	**697**	**638**	**645**	**580**	**643**
Rochester	544	573	604	556	569	495	555
Rest of county	71	106	93	82	76	85	88
MONTGOMERY COUNTY	**102**	**124**	**102**	**102**	**102**	**99**	**96**
Amsterdam	67	77	73	63	64	65	62
Rest of county	35	47	29	39	38	34	34
NASSAU COUNTY	**247**	**234**	**261**	**246**	**259**	**230**	**218**
Glen Cove	21	17	14	13	27	17	20
Rest of county	226	217	247	233	232	213	198
NIAGARA COUNTY	**214**	**266**	**246**	**288**	**241**	**222**	**193**
Lockport	30	40	42	41	32	35	41
Niagara Falls	111	135	116	142	121	111	85
North Tonawanda	29	26	42	43	36	23	21
Rest of county	44	65	46	62	52	53	46
ONEIDA COUNTY	**363**	**380**	**415**	**374**	**351**	**304**	**319**
Rome	47	73	51	66	63	51	46
Utica	215	216	236	220	213	185	178
Sherrill	4	1	4	2	2	4	1
Rest of county	97	90	124	86	73	64	94
ONONDAGA COUNTY	**455**	**503**	**515**	**428**	**491**	**440**	**442**
Syracuse	348	385	398	322	377	330	323
Rest of county	107	118	117	106	114	110	119
ONTARIO COUNTY	**82**	**97**	**106**	**97**	**77**	**101**	**105**
Canandaigua	19	22	24	15	17	22	21
Geneva	26	36	41	41	28	26	40
Rest of county	37	39	41	41	32	53	44
ORANGE COUNTY	**230**	**213**	**233**	**200**	**201**	**185**	**187**
Middletown	33	31	39	32	29	22	35
Newburgh	52	59	51	42	50	55	52
Port Jervis	28	21	24	29	20	9	16
Rest of county	117	102	119	97	102	99	84
ORLEANS COUNTY	**58**	**53**	**63**	**44**	**48**	**43**	**51**

Table 21 — STATE OF NEW YORK (exclusive of New York City): *Birt*

AREA	All births	MONTH OF BIRTH			
		Jan.	Feb.	Mar.	April
OSWEGO COUNTY	1,612	133	115	131	
Fulton	309	26	28	27	
Oswego	562	52	33	42	
Rest of county	741	55	54	62	
OTSEGO COUNTY	827	74	59	81	
Oneonta	236	23	20	27	
Rest of county	591	51	39	54	
PUTNAM COUNTY	214	18	10	21	
RENSSELAER COUNTY	2,031	170	148	186	
Rensselaer	158	18	9	13	
Troy	1,435	113	102	138	
Rest of county	438	39	37	35	
ROCKLAND COUNTY	906	71	78	75	
ST. LAWRENCE COUNTY	2,037	170	166	175	
Ogdensburg	404	32	34	33	
Rest of county	1,633	138	132	142	
SARATOGA COUNTY	1,145	88	86	93	
Saratoga Springs	275	16	19	22	
Mechanicville	174	13	13	15	
Rest of county	696	59	48	56	
SCHENECTADY COUNTY	2,220	171	202	187	
Schenectady	1,841	140	169	156	
Rest of county	379	31	33	31	
SCHOHARIE COUNTY	375	30	27	37	
SCHUYLER COUNTY	269	26	20	22	
SENECA COUNTY	412	34	35	32	
STEUBEN COUNTY	1,734	146	139	136	
Corning	431	43	36	36	
Hornell	314	27	30	20	
Rest of county	989	76	73	80	
SUFFOLK COUNTY	2,325	198	185	187	
SULLIVAN COUNTY	591	48	44	53	
TIOGA COUNTY	482	50	34	37	
TOMPKINS COUNTY	729	59	59	56	
Ithaca	416	38	36	36	
Rest of county	313	21	23	20	
ULSTER COUNTY	1,438	116	90	119	
Kingston	565	35	26	49	
Rest of county	873	81	64	70	
WARREN COUNTY	666	49	48	65	
Glens Falls	375	29	32	39	
Rest of county	291	20	16	26	
WASHINGTON COUNTY	858	67	72	75	
WAYNE COUNTY	882	76	65	55	
WESTCHESTER COUNTY	7,803	698	585	658	
Peekskill	306	25	20	34	
White Plains	455	41	35	43	
Mt. Vernon	1,034	94	89	83	

of stillbirths), by counties, according to month of birth: 1921 — (Continued)

AREA	MONTH OF BIRTH						
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
EGO COUNTY	**140**	**146**	**136**	**126**	**137**	**138**	**127**
lton	31	27	21	28	20	23	27
wego	45	54	57	37	45	50	52
Rest of county	64	65	58	61	72	65	48
GO COUNTY	**67**	**62**	**61**	**67**	**66**	**67**	**75**
eonta	12	21	18	25	22	14	17
Rest of county	55	41	43	42	44	53	58
AM COUNTY	**16**	**16**	**17**	**25**	**20**	**26**	**14**
SSELAER COUNTY	**170**	**198**	**171**	**155**	**162**	**155**	**169**
nsselaer	10	13	18	13	15	15	8
oy	125	146	121	107	99	114	121
Rest of county	35	39	32	35	48	26	40
KLAND COUNTY	**69**	**76**	**91**	**62**	**90**	**68**	**73**
LAWRENCE COUNTY	**182**	**167**	**200**	**155**	**153**	**158**	**169**
densburg	31	34	44	30	34	30	34
Rest of county	151	133	156	125	119	128	135
TOGA COUNTY	**84**	**98**	**116**	**87**	**106**	**95**	**98**
ratoga Springs	22	23	26	31	27	20	20
echanicville	10	11	19	13	11	19	16
Rest of county	52	64	71	43	68	56	62
NECTADY COUNTY	**183**	**184**	**182**	**186**	**188**	**181**	**179**
henectady	149	154	149	151	154	157	145
Rest of county	34	30	33	35	34	24	34
HARIE COUNTY	**28**	**32**	**26**	**34**	**24**	**35**	**41**
YLER COUNTY	**19**	**27**	**18**	**23**	**20**	**26**	**24**
CA COUNTY	**35**	**28**	**27**	**45**	**37**	**36**	**29**
BEN COUNTY	**145**	**160**	**158**	**122**	**144**	**130**	**153**
rning	33	30	44	30	31	37	38
rnell	28	34	24	22	25	28	24
Rest of county	84	96	90	70	88	65	91
OLK COUNTY	**187**	**205**	**215**	**211**	**183**	**217**	**190**
IVAN COUNTY	**55**	**37**	**65**	**57**	**45**	**55**	**38**
A COUNTY	**47**	**49**	**32**	**50**	**35**	**33**	**36**
KINS COUNTY	**59**	**56**	**55**	**56**	**64**	**59**	**79**
aca	37	29	31	31	36	38	40
Rest of county	22	27	24	25	28	21	39
ER COUNTY	**136**	**125**	**131**	**127**	**114**	**128**	**121**
ngston	64	44	56	55	42	51	46
Rest of county	72	81	75	72	72	77	75
REN COUNTY	**56**	**48**	**65**	**59**	**54**	**45**	**60**
ens Falls	29	23	40	36	36	21	33
Rest of county	27	25	25	23	18	24	27
HINGTON COUNTY	**68**	**78**	**92**	**78**	**62**	**59**	**72**
NE COUNTY	**70**	**75**	**77**	**79**	**75**	**81**	**59**
TCHESTER COUNTY	**653**	**632**	**681**	**632**	**664**	**638**	**638**
ekskill	31	21	22	29	20	27	24
hite Plains	41	44	27	35	55	37	33
. Vernon	87	76	89	85	90	79	76

Table 21 — STATE OF NEW YORK (exclusive of New York city): *Birth*

AREA	All births	MONTH OF BIRTH			
		Jan.	Feb.	Mar.	April
WESTCHESTER Co. — (*Concluded*)					
New Rochelle	737	63	56	67	73
Ossining	270	25	23	21	28
Portchester	575	58	41	50	38
Yonkers	2,530	229	194	192	205
Rest of county	1,896	163	127	168	155
WYOMING COUNTY	663	58	51	50	44
YATES COUNTY	290	31	18	22	21

sive of stillbirths), by counties, according to month of birth: **1921** — (Concluded)

AREA	MONTH OF BIRTH						
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
WESTCHESTER Co.— (*Concluded*)							
New Rochelle	68	57	55	73	54	50	64
Ossining	17	28	23	21	23	21	16
Portchester	54	41	42	45	46	53	52
Yonkers	209	204	250	188	215	213	212
Rest of county	146	161	173	156	161	158	161
WYOMING COUNTY	**68**	**66**	**70**	**60**	**45**	**42**	**53**
YATES COUNTY	**27**	**29**	**18**	**26**	**20**	**27**	**26**

Table 22—STATE OF NEW YORK (exclusive of New York City): *Births, exclusive of mother:*

Line number	AREA	All births	Total	WHITE					
				COUNTRY OF					
						Foreign			
				United States	Total	England, Scotland and Wales	Ireland	Germany (excludes German Poland)	Italy
1	**State of New York (exclusive of New York City)**	105,969	104,942	73,306	31,614	1,539	1,488	1,115	12,082
2	Cities	60,809	60,221	38,360	21,850	974	966	734	8,727
3	Rural [2]	45,160	44,721	34,946	9,764	565	522	381	3,355
4	ALBANY COUNTY	3,678	3,653	2,560	1,093	38	70	30	370
5	Albany	2,352	2,332	1,712	620	30	57	23	227
6	Cohoes	464	464	281	183	......	3	......	27
7	Watervliet	282	282	162	120	2	5	2	39
8	Rest of county	580	575	405	170	6	5	5	77
9	ALLEGANY COUNTY	697	694	662	32	8	1	......	6
10	BROOME COUNTY	2,831	2,819	2,018	799	21	21	12	178
11	Binghamton	1,514	1,504	1,010	493	11	19	9	90
12	Rest of county	1,317	1,315	1,008	306	10	2	3	88
13	CATTARAUGUS COUNTY	1,668	1,651	1,369	282	9	9	23	56
14	Olean	594	592	443	149	5	4	8	36
15	Salamanca	241	240	192	48	1	3	4	10
16	Rest of county	833	819	734	85	3	2	11	10
17	CAYUGA COUNTY	1,268	1,256	841	415	20	13	5	176
18	Auburn	808	797	427	370	16	12	3	170
19	Rest of county	460	459	414	45	4	1	2	6
20	CHAUTAUQUA COUNTY	2,536	2,530	1,828	701	30	11	32	334
21	Dunkirk	504	502	318	184	5	4	18	37
22	Jamestown	866	863	566	297	14	3	2	155
23	Rest of county	1,166	1,165	944	220	11	4	12	142
24	CHEMUNG COUNTY	1,452	1,445	1,236	209	7	14	8	76
25	Elmira	1,120	1,114	946	168	6	13	6	74
26	Rest of county	332	331	290	41	1	1	2	2
27	CHENANGO COUNTY	650	647	595	51	7	3	1	26
28	Norwich	184	182	152	29	1	2	......	20
29	Rest of county	466	465	443	22	6	1	1	6
30	CLINTON COUNTY	1,187	1,183	1,078	103	6	2	......	7
31	Plattsburg	311	311	293	18	1	1	......	5
32	Rest of county	876	872	785	85	5	1	......	2
33	COLUMBIA COUNTY	700	680	506	174	4	4	8	46
34	Hudson	333	321	212	109	3	1	5	22
35	Rest of county	367	359	294	65	1	3	3	24
36	CORTLAND COUNTY	642	641	548	93	6	2	2	51
37	Cortland	334	334	261	73	4	1	2	48
38	Rest of county	308	307	287	20	2	1	......	3
39	DELAWARE COUNTY	909	907	827	80	6	3	6	32
40	DUTCHESS COUNTY	1,677	1,634	1,182	451	19	25	11	197
41	Beacon	199	196	141	55	2	3	......	26
42	Poughkeepsie	736	713	480	233	7	6	5	89
43	Rest of county	742	725	561	163	10	16	6	82

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[1] "Poland" includes Russian, Austrian, German and not specified. [2] "Rural" as used in this

, by counties, according to color and for white children by country of birth of

							COLORED CHILDREN					
MOTHER												
Austria (ex-ludes Aus-rian Po-and)	Hungary	Poland ¹	Canada	Norway, Sweden and Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Chinese	Japanese	Line number
2,262	646	6,240	2,097	463	1,434	22	1,027	902	116	4	5	1
1,407	425	4,699	1,234	257	891	11	588	573	11	3	1	2
855	221	1,541	863	206	543	11	439	329	105	1	4	3
94	2	195	64	7	57	.....	25	25	.....	.....	.....	4
23	.....	84	28	4	38	.....	20	20	.....	.....	.....	5
18	1	63	32	2	4	.....	.....	.....	.....	.....	.....	6
18	1	31	.....	.....	12	.....	.....	.....	.....	.....	.....	7
35	.....	17	4	1	3	.....	5	5	.....	.....	.....	8
2	2	2	4	1	3	.....	3	3	.....	.....	.....	9
156	119	83	5	2	49	2	12	11	.....	.....	1	10
101	105	48	3	2	29	1	10	9	.....	.....	1	11
55	14	35	2	.....	20	1	2	2	.....	.....	.....	12
38	1	83	18	5	29	.....	17	4	13	.....	.....	13
21	1	45	6	3	18	.....	2	2	.....	.....	.....	14
2	.....	19	4	1	2	.....	1	.....	1	.....	.....	15
15	.....	19	8	1	9	.....	14	2	12	.....	.....	16
85	1	78	12	2	13	.....	12	12	.....	.....	.....	17
76	.....	65	6	1	12	.....	11	11	.....	.....	.....	18
9	1	13	6	1	1	.....	1	1	.....	.....	.....	19
35	2	87	17	118	22	1	6	6	.....	.....	.....	20
27	1	78	2	3	5	.....	2	2	.....	.....	.....	21
4	1	4	4	95	10	.....	3	3	.....	.....	.....	22
4	.....	5	11	20	7	1	1	1	.....	.....	.....	23
49	.....	22	4	2	12	.....	7	7	.....	.....	.....	24
23	.....	18	1	2	12	.....	6	6	.....	.....	.....	25
26	.....	4	3	.....	.....	.....	1	1	.....	.....	.....	26
2	.....	.....	2	3	1	1	3	3	.....	.....	.....	27
.....	.....	.....	1	1	1	1	2	2	.....	.....	.....	28
2	.....	.....	1	2	.....	.....	1	1	.....	.....	.....	29
2	.....	1	73	2	2	2	4	4	.....	.....	.....	30
1	.....	.....	9	1	.....	.....	.....	.....	.....	.....	.....	31
1	.....	1	64	1	2	2	4	4	.....	.....	.....	32
41	14	28	4	4	2	.....	20	20	.....	.....	.....	33
24	12	23	3	1	.....	.....	12	12	.....	.....	.....	34
17	2	5	1	3	2	.....	8	8	.....	.....	.....	35
2	1	1	5	1	13	.....	1	1	.....	.....	.....	36
2	1	1	2	.....	5	.....	.....	.....	.....	.....	.....	37
.....	.....	.....	3	1	8	.....	1	1	.....	.....	.....	38
6	5	5	5	3	3	.....	2	2	.....	.....	.....	39
22	41	63	2	10	26	1	43	43	.....	.....	.....	40
5	6	2	.....	.....	3	.....	3	3	.....	.....	.....	41
9	26	55	1	3	12	.....	23	23	.....	.....	.....	42
8	9	6	1	7	11	1	17	17	.....	.....	.....	43

cludes all territory outside of the cities and three large villages listed.

Table 22 — STATE OF NEW YORK (exclusive of New York City): *Births, exclu*
mother:

Line number	AREA	All births	Total	COUN				
				United States	Total	England, Scotland and Wales	Ireland	Germany (excludes German Poland)
44	ERIE COUNTY	16,500	16,345	10,297	6,044	240	184	363
45	Buffalo	13,232	13,094	8,250	4,842	204	165	281
46	Lackawanna [2]	654	642	160	481	4	5	7
47	Our Lady of Victory Infant Home, Lackawanna	261	261	221	40	5	7	3
48	Tonawanda	244	244	189	55	5	2	7
49	Rest of county	2,109	2,104	1,477	626	22	5	65
50	ESSEX COUNTY	797	797	692	105	3	6	......
51	FRANKLIN COUNTY	1,136	1,089	965	123	9	3	......
52	FULTON COUNTY	843	838	603	235	12	8	9
53	Gloversville	466	462	319	143	10	1	4
54	Johnstown	156	155	87	68	......	5	3
55	Rest of county	221	221	197	24	2	2	2
56	GENESEE COUNTY	849	832	588	244	10	1	8
57	Batavia	384	384	261	123	4	1	2
58	Rest of county	465	448	327	121	6	......	6
59	GREENE COUNTY	486	481	407	74	7	4	3
60	HAMILTON COUNTY	58	58	53	5	1	2	......
61	HERKIMER COUNTY	1,542	1,541	909	572	8	14	9
62	Little Falls	381	381	181	200	......	9	2
63	Rest of county	1,161	1,160	788	372	8	5	7
64	JEFFERSON COUNTY	1,852	1,852	1,475	376	19	8	3
65	Watertown	800	800	598	202	11	6	1
66	Rest of county	1,052	1,052	877	174	8	2	2
67	LEWIS COUNTY	537	537	455	82	2	4	1
68	LIVINGSTON COUNTY	798	786	576	210	8	20	3
69	MADISON COUNTY	869	867	738	129	7	4	4
70	Oneida	292	291	250	41	2	3	1
71	Rest of county	577	576	488	88	5	1	3
72	MONROE COUNTY	7,844	7,797	4,744	3,052	173	98	120
73	Rochester	6,826	6,782	3,977	2,804	150	93	106
74	Rest of county	1,018	1,015	767	248	23	5	14
75	MONTGOMERY COUNTY	1,248	1,245	715	530	12	11	10
76	Amsterdam	821	818	389	429	11	10	6
77	Rest of county	427	427	326	101	1	1	4
78	NASSAU COUNTY	2,851	2,802	1,730	1,072	58	107	40
79	Glen Cove	244	237	83	154	10	12	2
80	Rest of county	2,607	2,565	1,647	918	48	95	38
81	NIAGARA COUNTY	2,942	2,925	1,664	1,260	90	31	21
82	Lockport	441	441	329	112	8	5	2
83	Niagara Falls	1,500	1,489	610	878	59	24	8
84	North Tonawanda	376	376	207	169	1	2	3
85	Rest of county	625	619	518	101	22	......	8

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[1] "Poland" includes Russian, Austrian, German and not specified.
[2] Exclusive of Our Lady of Victory Infant Home.

rths, by counties, according to color and for white children by country of birth of
ontinued)

REN								COLORED CHILDREN					
OF MOTHER													
RY													
s)	Austria (excludes Austrian Poland)	Hungary	Poland[1]	Canada	Norway, Sweden and Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Chinese	Japanese	Line number
95	400	195	2,296	376	35	159	4	155	145	9	1	.....	44
39	245	127	1,796	321	30	120	2	138	133	4	1	.....	45
15	51	25	295	4	......	18	1	12	12	......	......	.....	46
..	4	1	3	10	......	3	......	.....	.....	......	......	.....	47
..	18	9	......	7	2	3	......	.....	.....	......	......	.....	48
21	82	33	202	34	3	15	1	5	.....	5	......	.....	49
6	......	10	35	13	......	6	......	.....	.....	......	......	.....	50
1	2	......	......	99	......	2	1	47	.....	47	......	.....	51
32	20	1	14	5	2	12	......	5	5	......	......	.....	52
15	7	......	5	2	2	6	......	4	4	......	......	.....	53
15	8	1	......	3	......	6	......	1	1	......	......	.....	54
2	5	......	9	......	......	......	......	.....	.....	......	......	.....	55
4	8	2	39	16	......	2	......	17	5	12	......	.....	56
3	5	1	14	4	......	1	......	.....	.....	......	......	.....	57
1	3	1	25	12	......	1	......	17	5	12	......	.....	58
13	12	6	4	......	2	4	......	5	5	......	......	.....	59
..	......	......	......	2	......	......	......	.....	.....	......	......	.....	60
66	73	3	103	21	6	11	......	1	1	......	......	.....	61
39	46	2	33	3	3	1	......	.....	.....	......	......	.....	62
[illegible]	27	1	70	18	3	10	......	1	1	......	......	.....	63
4	23	5	15	188	1	27	1	.....	.....	......	......	.....	64
[illegible]	4	4	7	91	......	13	......	.....	.....	......	......	.....	65
2	19	1	8	97	1	14	1	.....	.....	......	......	.....	66
3	11	12	28	17	......	3	......	.....	.....	......	......	.....	67
1	2	......	4	6	2	9	......	12	12	......	......	.....	68
4	7	1	2	10	2	5	......	2	.....	2	......	.....	69
..	......	1	......	3	......	1	......	1	.....	1	......	.....	70
4	7	......	2	7	2	4	......	1	.....	1	......	.....	71
35	89	9	226	218	11	148	1	47	45	2	......	.....	72
29	80	8	209	187	9	125	1	44	42	2	......	.....	73
6	9	1	17	31	2	23	......	3	3	......	......	.....	74
52	14	......	210	9	1	10	......	3	3	......	......	.....	75
49	8	......	191	4	......	7	......	3	3	......	......	.....	76
3	6	......	19	5	1	3	......	.....	.....	......	......	.....	77
51	59	14	246	13	40	37	......	49	49	......	......	.....	78
8	2	1	29	......	5	5	......	7	7	......	......	.....	79
43	57	13	217	13	35	32	......	42	42	......	......	.....	80
39	112	15	294	196	......	60	1	17	11	6	......	.....	81
1	3	......	6	12	......	2	......	.....	.....	......	......	.....	82
26	28	3	228	144	......	53	1	11	10	1	......	.....	83
10	80	9	45	3	......	1	......	.....	.....	......	......	.....	84
2	1	3	15	37	......	4	......	6	1	5	......	.....	85

Table 22 — STATE OF NEW YORK (exclusive of New York City): *Births, exclusive of mother:* 1921

e number	AREA	All births	WHITE						
				COUNTRY OF					
					Foreign				
			Total	United States	Total	England, Scotland and Wales	Ireland	Germany (excludes German Poland)	Italy
86	ONEIDA COUNTY	4,390	4,382	2,427	1,955	96	21	26	886
87	Rome	712	710	397	313	12	2	3	212
88	Utica	2,525	2,522	1,223	1,299	57	11	19	651
89	Sherrill	25	25	21	4	2	......	......	......
90	Rest of county	1,128	1,125	786	339	25	8	4	23
91	ONONDAGA COUNTY	5,746	5,710	3,814	1,895	94	112	72	751
92	Syracuse	4,357	4,340	2,837	1,502	69	100	62	602
93	Rest of county	1,389	1,370	977	393	25	12	10	149
94	ONTARIO COUNTY	1,154	1,145	885	260	32	14	8	138
95	Canandaigua	242	238	201	37	8	4	......	16
96	Geneva	394	390	255	135	9	8	7	93
97	Rest of county	518	517	429	88	15	2	1	29
98	ORANGE COUNTY	2,486	2,447	1,906	541	38	40	9	200
99	Middletown	354	348	296	52	4	1	1	31
100	Newburgh	614	606	468	138	8	6	3	76
101	Port Jervis	264	263	221	42	2	3	1	15
102	Rest of county	1,254	1,230	921	309	24	30	4	78
103	ORLEANS COUNTY	637	637	500	137	20	1	9	67
104	OSWEGO COUNTY	1,612	1,610	1,313	297	15	6	13	114
105	Fulton	309	308	223	85	1	1	1	34
106	Oswego	562	562	413	149	9	5	7	66
107	Rest of county	741	740	677	63	5	......	5	14
108	OTSEGO COUNTY	827	825	726	99	4	9	5	30
109	Oneonta	236	235	194	41	1	5	......	23
110	Rest of county	591	590	532	58	3	4	5	7
111	PUTNAM COUNTY	214	213	163	50	2	9	1	32
112	RENSSELAER COUNTY	2,031	2,024	1,577	447	24	58	19	131
113	Rensselaer	158	158	134	24	2	......	3	11
114	Troy	1,435	1,429	1,104	325	16	55	6	102
115	Rest of county	438	437	339	98	6	3	10	18
116	ROCKLAND COUNTY	906	873	641	232	9	13	17	92
117	ST. LAWRENCE COUNTY	2,037	2,035	1,699	336	5	6	1	29
118	Ogdensburg	404	404	343	61	2	......	......	......
119	Rest of county	1,633	1,631	1,356	275	3	6	1	29
120	SARATOGA COUNTY	1,145	1,141	853	287	13	9	5	124
121	Saratoga Springs	275	271	228	43	7	2	1	16
122	Mechanicville	174	174	100	74	2	2	......	60
123	Rest of county	696	696	525	170	4	5	4	48
124	SCHENECTADY COUNTY	2,220	2,211	1,318	893	43	17	27	429
125	Schenectady	1,841	1,832	1,042	790	36	13	22	379
126	Rest of county	379	379	276	103	7	4	5	50
127	SCHOHARIE COUNTY	375	374	343	31	......	5	5	9
128	SCHUYLER COUNTY	269	267	231	35	4	1	......	29
129	SENECA COUNTY	412	412	319	93	5	4	4	62

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[1] "Poland" includes Russian, Austrian, German and not specified.

stillbirths, by counties, according to color and for white children by country of birth of **(Continued)**

CHILDREN								COLORED CHILDREN					
BIRTH OF MOTHER													
Country													
Russia (excludes Russian Poland)	Austria (excludes Austrian Poland)	Hungary	Poland[1]	Canada	Norway, Sweden and Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Chinese	Japanese	Line number
63	40	3	593	71	6	150	.....	8	8	.....	.....	.....	86
8	9	1	42	6	2	16	.....	2	2	.....	.....	.....	87
45	13	1	357	43	2	100	.....	3	3	.....	.....	.....	88
.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	89
10	18	1	194	20	2	34	.....	3	3	.....	.....	.....	90
145	138	7	350	121	10	95	1	36	16	20	.....	.....	91
128	86	2	285	101	5	62	1	17	16	1	.....	.....	92
17	52	5	65	20	5	33	.....	19	.....	19	.....	.....	93
3	8	1	4	18	7	27	.....	9	9	.....	.....	.....	94
1	.....	.....	.....	3	1	4	.....	4	4	.....	.....	.....	95
.....	.....	.....	1	5	5	7	.....	4	4	.....	.....	.....	96
2	8	1	3	10	1	16	.....	1	1	.....	.....	.....	97
55	58	20	85	6	4	26	.....	39	39	.....	.....	.....	98
5	3	1	2	1	.....	3	.....	6	6	.....	.....	.....	99
18	11	3	7	1	2	3	.....	8	8	.....	.....	.....	100
5	11	.....	4	1	.....	.....	.....	1	1	.....	.....	.....	101
27	33	16	72	3	2	20	.....	24	24	.....	.....	.....	102
2	3	.....	20	4	1	10	.....	.....	.....	.....	.....	.....	103
11	22	.....	60	46	1	9	.....	2	2	.....	.....	.....	104
1	9	.....	23	11	.....	4	.....	1	1	.....	.....	.....	105
5	5	.....	32	18	.....	2	.....	.....	.....	.....	.....	.....	106
5	8	.....	5	17	1	3	.....	1	1	.....	.....	.....	107
5	22	1	6	3	6	8	.....	2	2	.....	.....	.....	108
3	.....	.....	2	2	1	4	.....	1	1	.....	.....	.....	109
2	22	1	4	1	5	4	.....	1	1	.....	.....	.....	110
2	1	.....	.....	2	1	.....	.....	1	1	.....	.....	.....	111
33	25	1	79	18	8	51	.....	7	7	.....	.....	.....	112
.....	1	.....	2	1	1	3	.....	.....	.....	.....	.....	.....	113
10	19	.....	68	10	4	35	.....	6	6	.....	.....	.....	114
23	5	1	9	7	3	13	.....	1	1	.....	.....	.....	115
22	31	9	15	4	8	12	.....	33	33	.....	.....	.....	116
5	8	17	17	226	3	19	.....	2	1	1	.....	.....	117
1	.....	1	.....	56	.....	1	.....	.....	.....	.....	.....	.....	118
4	8	16	17	170	3	18	.....	2	1	1	.....	.....	119
28	30	3	29	25	5	16	1	4	3	.....	1	.....	120
4	2	.....	3	1	3	4	.....	4	3	.....	1	.....	121
1	1	.....	.....	2	.....	6	.....	.....	.....	.....	.....	.....	122
23	27	3	26	22	2	6	1	.....	.....	.....	.....	.....	123
69	29	7	218	30	7	17	.....	9	9	.....	.....	.....	124
59	24	6	204	25	6	16	.....	9	9	.....	.....	.....	125
10	5	1	14	5	1	1	.....	.....	.....	.....	.....	.....	126
1	2	4	.....	4	1	.....	.....	1	1	.....	.....	.....	127
.....	1	.....	5	4	.....	.....	1	2	2	.....	.....	.....	128
3	.....	.....	.....	2	10	3	.....	.....	.....	.....	.....	.....	129

Table 22 — STATE OF NEW YORK (exclusive of New York City): *Births, exclusive of mothers:* 1921

Line number	AREA	All births	WHITE						
			Total	COUNTRY OF					
				United States	Foreign				
					Total	England, Scotland and Wales	Ireland	Germany (excludes German Poland)	Italy
130	Steuben County	1,734	1,734	1,574	160	9	3	11	75
131	Corning	431	431	342	89	3	2	7	40
132	Hornell	314	314	272	42	2	1	1	29
133	Rest of county	989	989	960	29	4	......	3	6
134	Suffolk County	2,325	2,251	1,406	784	53	104	34	176
135	Sullivan County	591	591	436	155	4	2	12	3
136	Tioga County	482	478	427	51	3	1	4	19
137	Tompkins County	729	720	619	101	5	3	4	31
138	Ithaca	416	407	347	60	2	1	2	26
139	Rest of county	313	313	272	41	3	2	2	5
140	Ulster County	1,438	1,426	1,133	291	8	16	15	145
141	Kingston	565	558	466	90	5	7	11	29
142	Rest of county	873	868	667	201	3	9	4	116
143	Warren County	666	665	580	85	4	14	3	27
144	Glens Falls	375	374	310	64	2	12	1	26
145	Rest of county	291	291	270	21	2	2	2	1
146	Washington County	858	857	718	139	15	10	1	54
147	Wayne County	882	880	676	204	8	2	5	101
148	Westchester County	7,803	7,553	4,223	3,329	168	319	69	1,634
149	Peekskill	306	297	216	80	3	5	2	41
150	White Plains	455	440	264	176	9	27	3	95
151	Mt. Vernon	1,034	992	568	424	15	34	15	281
152	New Rochelle	737	675	396	279	21	38	9	145
153	Ossining	270	262	172	90	6	12	2	51
154	Portchester	575	564	277	287	10	22	3	176
155	Yonkers	2,530	2,488	1,323	1,165	57	100	17	394
156	Rest of county	1,896	1,835	1,007	828	47	81	18	451
157	Wyoming County	663	659	554	105	10	5	3	22
158	Yates County	290	290	264	25	8	1	1	5

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[1] "Pol nd" includes Russian, Austrian, German, and not specified.

births, by counties, according to color and for white children by country of birth of **(Concluded)**

LDREN								COLORED CHILDREN					
H OF MOTHER													
ntry													
us- ia x- des us- an o- nd)	Austria (excludes Austrian Poland)	Hungary	Poland [1]	Canada	Norway, Sweden and Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Chinese	Japanese	Line number
1	19	2	13	5	10	12	......	......	......	......	......	......	130
...	12	2	3	3	8	9	......	......	......	......	......	......	131
...	3	......	4	......	1	1	......	......	......	......	......	......	132
1	4	......	6	2	1	2	......	......	......	......	......	......	133
63	55	11	211	15	27	35	1	74	70	3	......	1	134
76	32	10	7	......	2	7	......	......	......	......	......	......	135
13	7	......	8	2	1	2	......	4	4	......	......	......	136
12	7	11	3	2	3	20	......	9	8	......	1	......	137
2	2	9	3	2	1	10	......	9	8	......	1	......	138
10	5	2	......	......	2	10	......	......	......	......	......	......	139
46	16	7	22	2	6	8	2	12	12	......	......	......	140
19	5	......	9	1	......	4	2	7	7	......	......	......	141
27	11	7	13	1	6	4	......	5	5	......	......	......	142
7	2	......	3	13	1	11	......	1	1	......	......	......	143
6	1	......	......	7	......	9	......	1	1	......	......	......	144
1	1	......	3	6	1	2	......	......	......	......	......	......	145
8	27	1	9	11	2	1	......	1	1	......	......	......	146
1	1	......	4	5	1	76	......	2	2	......	......	......	147
298	301	69	280	43	63	85	1	250	245	1	1	3	148
9	15	1	1	1	1	1	1	9	9	......	......	......	149
13	11	1	2	3	6	6	......	15	15	......	......	......	150
40	7	3	7	8	7	7	......	42	42	......	......	......	151
27	7	3	3	4	11	11	......	62	61	1	......	......	152
1	3	2	3	1	4	5	......	8	8	......	......	......	153
27	10	......	24	4	7	4	......	11	11	......	......	......	154
104	194	42	211	11	9	26	......	42	42	......	......	......	155
77	54	17	29	11	18	25	......	61	57	......	1	3	156
3	10	1	35	8	1	7	......	4	4	......	......	......	157
1	1	......	......	3	6	......	......	......	......	......	......	......	158

Table 23 — STATE OF NEW YORK (exclusive of New York City): *Births (exc*

Line number	AGE OF MOTHER		All births	16 years	17 years	18 years	19 years
1	**TOTAL**		**105,969**	**15**	**38**	**175**	**530**
2	**Males**		**54,709**	**9**	**16**	**104**	**264**
3	**Females**		**51,260**	**6**	**22**	**71**	**266**
4	Under 15 years	M	23	....	1	1	....
5		F	14	....	1	1	1
6	15 years	M	65	2	2	4	2
7		F	50	2	....	2	2
8	16 years	M	231	2	1	11	18
9		F	224	....	6	6	16
10	17 years	M	613	1	3	27	35
11		F	580	1	3	19	42
12	18 years	M	1,307	1	4	29	57
13		F	1,244	1	4	20	61
14	19 years	M	1,959	2	3	16	77
15		F	1,773	1	3	13	64
16	20 years	M	2,307	1	1	6	31
17		F	2,138	....	2	2	30
18	21 years	M	2,597	....	....	2	16
19		F	2,444	....	....	2	20
20	22 years	M	2,824	....	1	3	15
21		F	2,643	....	....	1	18
22	23 years	M	3,187	....	....	5	7
23		F	2,909	1	....	2	6
24	24 years	M	3,346	....	....	....	3
25		F	3,154	....	3	....	2
26	25 years	M	3,242	....	....	....	....
27		F	3,055	....	....	1	1
28	26 years	M	3,313	....	....	....	....
29		F	3,075	....	....	....	....
30	27 years	M	3,197	....	....	....	2
31		F	2,932	....	....	....	....
32	28 years	M	3,250	....	....	....	....
33		F	3,019	....	....	....	....
34	29 years	M	2,773	....	....	....	1
35		F	2,630	....	....	1	2
36	30 years	M	2,834	....	....	....	....
37		F	2,677	....	....	1	....
38	31 years	M	2,222	....	....	....	....
39		F	2,066	....	....	....	....
40	32 years	M	2,196	....	....	....	....
41		F	2,174	....	....	....	....
42	33 years	M	2,022	....	....	....	....
43		F	1,974	....	....	....	1
44	34 years	M	1,828	....	....	....	....
45		F	1,692	....	....	....	....
46	35 years	M	1,781	....	....	....	....
47		F	1,638	....	....	....	....
48	36 years	M	1,622	....	....	....	....
49		F	1,518	....	....	....	....
50	37 years	M	1,320	....	....	....	....
51		F	1,259	....	....	....	....
52	38 years	M	1,312	....	....	....	....
53		F	1,232	....	....	....	....
54	39 years	M	919	....	....	....	....
55		F	886	....	....	....	....
56	40 years	M	812	....	....	....	....
57		F	735	....	....	....	....
58	41 years	M	487	....	....	....	....
59		F	417	....	....	....	....
60	42 years	M	426	....	....	....	....
61		F	419	....	....	....	....
62	43 years	M	255	....	....	....	....
63		F	252	....	....	....	....
64	44 years	M	162	....	....	....	....
65		F	177	....	....	....	....
66	45–49 years	M	203	....	....	....	....
67		F	192	....	....	....	....
68	50 years and over	M	12	....	....	....	....
69		F	5	....	....	....	....
70	Age unknown	M	62	....	....	....	....
71		F	63	....	....	....	....

of stillbirths), by sex and the color and age of mother by age of father: **1921**

BIRTHS										Line number
FATHER										
21 years	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years	30 years	
2,189	2,956	3,884	4,714	5,162	5,606	5,998	6,382	5,954	5,888	1
1,101	1,515	1,964	2,502	2,665	2,996	3,020	3,271	3,105	3,041	2
1,088	1,441	1,920	2,212	2,497	2,610	2,978	3,111	2,849	2,847	3
....	....	1	2	....	....	1	....	....	1	4
1	....	....	2	....	....	....	....	1	....	5
2	4	6	....	....	3	2	....	....	....	6
5	5	5	3	2	1	1	1	....	....	7
19	19	18	20	16	23	2	6	9	6	8
28	15	21	20	15	8	13	9	8	1	9
63	65	68	60	44	43	38	28	19	6	10
62	71	64	61	39	34	17	17	12	13	11
155	147	132	132	127	96	61	63	32	22	12
149	156	182	102	111	67	61	69	30	31	13
221	217	237	207	172	157	118	86	60	41	14
182	199	215	169	169	136	106	71	71	52	15
207	245	244	285	204	196	159	137	106	92	16
185	218	267	266	198	183	149	121	82	88	17
191	272	289	298	290	256	201	152	131	91	18
177	265	288	286	264	211	201	173	116	80	19
96	220	278	342	318	278	251	206	158	144	20
106	217	274	282	287	264	257	199	175	110	21
62	140	294	349	354	340	309	275	225	191	22
52	130	276	316	346	293	302	290	194	163	23
34	62	168	342	350	357	356	332	304	232	24
32	65	155	307	331	363	326	350	263	195	25
15	43	96	178	311	371	347	329	312	264	26
17	31	91	155	296	302	377	343	277	235	27
9	27	62	91	185	377	380	369	316	280	28
15	26	51	97	180	319	342	360	295	250	29
10	21	16	72	102	180	374	394	372	296	30
8	13	26	57	106	157	369	310	301	292	31
5	13	19	45	68	129	173	400	337	351	32
7	6	21	33	69	101	170	353	295	353	33
3	8	10	27	37	80	80	182	307	295	34
4	6	9	11	33	52	93	161	306	290	35
3	5	7	11	30	38	64	130	182	310	36
....	2	12	10	20	52	75	140	164	295	37
1	4	4	14	15	28	23	64	99	165	38
1	4	9	8	8	22	32	46	92	131	39
....	1	6	14	11	15	24	40	44	99	40
1	2	....	6	3	15	32	53	54	92	41
1	1	1	2	3	6	18	29	33	62	42
....	1	4	8	1	8	15	19	31	60	43
....	....	2	5	4	8	13	7	18	28	44
1	....	....	4	3	7	12	12	15	30	45
....	1	2	....	5	5	7	12	16	25	46
....	....	....	3	5	3	11	9	20	27	47
1	....	1	....	3	2	6	6	6	13	48
1	2	....	2	4	7	5	7	7	21	49
....	....	....	1	1	....	4	3	4	6	50
....	....	....	1	....	....	4	5	8	14	51
....	....	1	....	4	2	4	8	5	8	52
1	....	....	1	....	1	1	7	9	9	53
....	....	....	....	....	....	1	2	3	3	54
....	....	....	1	....	....	1	2	4	2	55
....	....	....	....	1	1	....	2	2	3	56
....	....	....	1	3	2	1	....	3	6	57
....	....	....	2	....	1	1	2	1	....	58
....	....	....	....	....	....	....	....	....	....	59
....	....	....	....	....	2	1	1	....	....	60
....	....	....	....	....	....	....	....	....	1	61
....	....	....	....	....	1	....	1	1	....	62
....	....	....	....	1	....	....	....	....	....	63
....	....	....	1	....	....	....	....	....	1	64
....	....	....	....	....	....	....	....	1	....	65
....	....	....	....	....	1	....	....	....	1	66
....	....	....	....	....	....	1	....	....	1	67
....	....	....	....	....	....	1	....	1	....	68
....	....	....	....	....	....	....	....	....	....	69
....	....	2	1	1	2	1	5	2	2	70
1	2	....	....	3	....	1	5	1	2	71

Table 23 — STATE OF NEW YORK (exclusive of New York City): *Births*

Line number	AGE OF MOTHER		31 years	32 years	33 years	34 years	35 years
1	**TOTAL**		4,952	5,186	4,947	4,550	
2	**Males**		2,564	2,564	2,491	2,355	
3	**Females**		2,388	2,522	2,456	2,195	
4	Under 15 years	M	......	2	......	......	
5		F	......	......	......	......	
6	15 years	M	1	2	1	1	
7		F	......	2	......	1	
8	16 years	M	2	2	2	2	
9		F	3	3	4	1	
10	17 years	M	8	4	2	4	
11		F	9	3	1	1	
12	18 years	M	17	15	14	9	
13		F	13	14	16	14	
14	19 years	M	26	36	25	11	
15		F	21	34	15	9	
16	20 years	M	45	39	33	28	
17		F	38	35	26	21	
18	21 years	M	66	57	37	28	
19		F	68	55	40	39	
20	22 years	M	73	96	60	50	
21		F	81	86	59	30	
22	23 years	M	131	104	93	71	
23		F	99	90	79	55	
24	24 years	M	137	126	82	111	
25		F	141	113	98	106	
26	25 years	M	206	171	105	99	
27		F	172	166	127	75	
28	26 years	M	228	207	167	113	
29		F	218	174	161	120	
30	27 years	M	245	196	188	119	
31		F	212	198	190	137	
32	28 years	M	264	267	243	173	
33		F	257	270	213	155	
34	29 years	M	274	254	200	206	
35		F	266	224	220	209	
36	30 years	M	257	277	250	220	
37		F	261	252	236	202	
38	31 years	M	240	239	232	182	
39		F	229	244	197	174	
40	32 years	M	140	255	239	230	
41		F	109	265	219	209	
42	33 years	M	83	136	239	218	
43		F	60	105	246	192	
44	34 years	M	35	55	106	219	
45		F	45	66	133	187	
46	35 years	M	30	42	62	101	
47		F	28	40	70	96	
48	36 years	M	9	40	46	64	
49		F	17	29	38	69	
50	37 years	M	16	9	24	41	
51		F	15	21	21	42	
52	38 years	M	8	19	14	29	
53		F	13	12	16	25	
54	39 years	M	3	7	7	14	
55		F	3	6	11	8	
56	40 years	M	5	4	8	6	
57		F	1	9	10	11	
58	41 years	M	......	......	1	......	
59		F	5	1	3	3	
60	42 years	M	2	2	3	2	
61		F	2	1	1	......	
62	43 years	M	1	1	3	......	
63		F	......	......	1	1	
64	44 years	M	1	......	......	......	......
65		F	......	......	3	1	......
66	45–49 years	M	......	......	1	2	
67		F	......	2	......	1	
68	50 years and over	M	......	......	......	......	
69		F	......	......	......	......	......
70	Age unknown	M	2	......	4	2	
71		F	2	......	2	1	

of stillbirths), by sex and the color and age of mother by age of father: 1921 — (Continued)

BIRTHS											
FATHER											Line number
37 years	38 years	39 years	40 years	41 years	42 years	43 years	44 years	45–49 years	50 years and over	Age unknown	
3,659	3,488	3,019	2,841	1,908	2,144	1,509	1,380	4,343	1,970	998	1
1,881	1,783	1,576	1,484	995	1,144	786	667	2,214	1,017	514	2
1,778	1,705	1,443	1,357	913	1,000	723	713	2,129	953	484	3
......	......	......	......	......	......	......	......	1	1	11	4
......	......	......	1	......	......	......	......	......	......	6	5
1	1	......	......	......	......	......	......	......	......	21	6
......	......	......	1	......	......	......	......	......	......	13	7
1	1	......	......	......	1	......	......	1	1	31	8
2	......	1	......	......	......	......	......	......	......	25	9
3	2	......	......	......	......	......	1	1	1	33	10
3	1	......	1	1	......	......	......	......	......	44	11
3	1	......	2	2	2	......	1	1	2	59	12
2	1	1	1	1	......	2	2	3	1	52	13
8	3	2	5	2	2	4	1	4	2	68	14
7	4	7	2	......	4	2	1	6	1	63	15
4	8	8	10	2	1	3	1	5	4	46	16
9	10	7	9	2	4	......	3	6	3	41	17
12	12	9	7	6	5	3	3	9	9	40	18
9	5	10	6	3	5	2	2	5	4	29	19
28	9	12	9	2	7	4	3	10	11	37	20
24	16	9	10	3	11	2	4	5	3	16	21
22	20	11	11	8	7	3	6	17	14	17	22
25	28	14	13	2	5	9	3	18	8	25	23
32	34	21	25	10	10	2	3	15	12	23	24
30	27	17	19	8	5	9	8	11	10	15	25
47	42	23	17	5	11	5	8	15	15	12	26
18	37	18	26	14	6	7	5	22	14	15	27
60	43	34	27	14	13	13	6	24	20	15	28
62	46	35	23	9	16	7	7	26	12	20	29
100	58	49	42	25	23	12	10	39	13	14	30
99	70	38	30	17	12	5	6	30	21	12	31
99	120	64	42	34	31	20	17	41	12	10	32
[illegible]	113	54	41	14	20	19	10	44	19	12	33
[illegible]	84	95	49	24	29	16	11	50	30	10	34
[illegible]	80	85	41	24	28	25	17	48	32	6	35
[illegible]	113	78	104	47	37	20	15	58	27	6	36
[illegible]	110	79	91	37	34	29	15	58	34	10	37
[illegible]	92	87	54	55	46	28	20	61	28	6	38
[illegible]	111	67	64	56	44	21	22	51	20	7	39
[illegible]	130	99	80	59	71	27	31	76	32	3	40
151	134	98	75	51	77	28	21	74	22	5	41
163	146	96	83	56	56	66	40	81	39	4	42
167	141	116	89	59	62	46	43	74	47	3	43
169	159	126	111	53	75	42	66	107	40	3	44
[illegible]	112	119	81	71	62	42	51	98	37	6	45
[illegible]	151	152	123	77	73	52	41	173	57	9	46
[illegible]	142	130	133	80	74	42	51	158	51	5	47
[illegible]	147	148	144	89	105	67	56	154	65	9	48
[illegible]	139	122	136	88	92	54	47	170	49	4	49
[illegible]	131	132	139	98	106	71	51	168	56	1	50
[illegible]	126	118	100	83	88	74	51	159	44	2	51
[illegible]	145	134	127	92	138	65	52	202	78	8	52
[illegible]	129	121	125	82	106	75	74	199	69	6	53
[illegible]	54	106	106	71	80	69	57	149	81	1	54
[illegible]	52	99	87	72	80	70	64	178	68	2	55
[illegible]	45	48	92	81	82	65	51	194	73	2	56
[illegible]	35	40	79	58	71	47	68	173	77	5	57
[illegible]	12	23	37	50	57	47	32	141	61	......	58
[illegible]	12	21	31	46	29	41	37	113	55	2	59
[illegible]	13	7	23	20	52	40	29	144	72	......	60
[illegible]	18	11	28	18	38	35	39	134	74	......	61
[illegible]	2	7	10	6	12	22	20	108	46	......	62
[illegible]	3	2	8	9	18	18	34	95	55	......	63
[illegible]	1	3	1	4	5	14	28	67	34	......	64
[illegible]	3	1	3	3	5	8	19	87	40	2	65
[illegible]	2	1	1	2	6	6	7	95	72	......	66
[illegible]	1	1	2	2	3	4	7	82	76	4	67
[illegible]	......	......	1	1	......	......	......	1	5	1	68
[illegible]	......	......	......	......	......	......	......	......	5	......	69
[illegible]	1	1	2	......	1	......	......	2	4	19	70
[illegible]	......	2	1	......	1	......	2	2	2	27	71

Table 23 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive of*

Line number	AGE OF MOTHER		All births	BIRTHS TO NATIVE				
				AGE OF				
				16 years	17 years	18 years	19 years	20 years
1	TOTAL		73,306	15	33	160	490	1,045
2	Males		37,881	9	15	97	246	540
3	Females		35,425	6	18	63	244	505
4	Under 15 years	M	20	....	1	1	....	....
5		F	13	....	1	1	1	....
6	15 years	M	56	2	1	4	2	8
7		F	43	2	....	1	2	3
8	16 years	M	183	2	1	10	14	13
9		F	182	....	4	3	14	17
10	17 years	M	491	1	3	24	35	48
11		F	491	1	3	18	41	53
12	18 years	M	1,098	1	4	27	51	93
13		F	1,036	1	3	19	58	98
14	19 years	M	1,596	2	3	16	74	120
15		F	1,470	1	3	12	57	109
16	20 years	M	1,858	1	1	6	30	114
17		F	1,751	....	2	2	26	103
18	21 years	M	2,110	....	....	1	15	65
19		F	1,967	....	....	2	18	44
20	22 years	M	2,213	....	1	3	14	34
21		F	2,040	....	....	1	17	33
22	23 years	M	2,458	....	....	5	5	22
23		F	2,257	1	....	2	4	17
24	24 years	M	2,481	....	....	....	3	10
25		F	2,341	....	2	....	2	14
26	25 years	M	2,323	....	....	....	....	5
27		F	2,191	....	....	1	1	7
28	26 years	M	2,323	....	....	....	....	4
29		F	2,155	....	....	....	....	3
30	27 years	M	2,244	....	....	....	2	2
31		F	2,029	....	....	....	....	1
32	28 years	M	2,176	....	....	....	....	1
33		F	2,001	....	....	....	....	....
34	29 years	M	1,808	....	....	....	1	....
35		F	1,779	....	....	1	2	....
36	30 years	M	1,760	....	....	....	....	....
37		F	1,643	....	....	....	....	3
38	31 years	M	1,500	....	....	....	....	....
39		F	1,391	....	....	....	....	....
40	32 years	M	1,372	....	....	....	....	....
41		F	1,378	....	....	....	....	....
42	33 years	M	1,233	....	....	....	....	1
43		F	1,225	....	....	....	1	....
44	34 years	M	1,152	....	....	....	....	....
45		F	1,098	....	....	....	....	....
46	35 years	M	1,056	....	....	....	....	....
47		F	953	....	....	....	....	....
48	36 years	M	961	....	....	....	....	....
49		F	884	....	....	....	....	....
50	37 years	M	781	....	....	....	....	....
51		F	719	....	....	....	....	....
52	38 years	M	716	....	....	....	....	....
53		F	681	....	....	....	....	....
54	39 years	M	544	....	....	....	....	....
55		F	523	....	....	....	....	....
56	40 years	M	441	....	....	....	....	....
57		F	386	....	....	....	....	....
58	41 years	M	309	....	....	....	....	....
59		F	270	....	....	....	....	....
60	42 years	M	234	....	....	....	....	....
61		F	239	....	....	....	....	....
62	43 years	M	148	....	....	....	....	....
63		F	136	....	....	....	....	....
64	44 years	M	76	....	....	....	....	....
65		F	104	....	....	....	....	....
66	45–49 years	M	113	....	....	....	....	....
67		F	99	....	....	....	....	....
68	50 years and over	M	5	....	....	....	....	....
69		F	4	....	....	....	....	....
70	Age unknown	M	42	....	....	....	....	....
71		F	30	....	....	....	....	....

stillbirths), by sex and the color and age of mother by age of father: **1921 — (Continued)**

WHITE MOTHERS										
FATHER										
21 years	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years	30 years	Line number
1,917	2,652	3,388	3,927	4,120	4,333	4,531	4,634	4,225	3,985	1
996	1,359	1,708	2,078	2,112	2,290	2,305	2,398	2,199	2,092	2
921	1,293	1,680	1,849	2,008	2,043	2,226	2,236	2,026	1,893	3
....	....	1	2	....	....	....	....	....	1	4
1	....	....	2	....	....	....	....	1	....	5
2	4	4	....	....	3	1	....	....	....	6
5	4	4	2	2	1	1	....	....	....	7
15	19	14	18	11	14	1	4	4	4	8
26	13	17	14	12	7	9	6	5	....	9
53	55	53	44	32	28	26	20	14	4	10
57	62	56	44	27	22	13	14	11	10	11
148	134	115	109	99	70	50	40	26	17	12
128	141	116	94	79	54	39	51	34	18	13
203	186	202	166	134	121	75	62	40	30	14
163	180	187	137	136	109	79	46	52	34	15
183	222	216	221	156	150	122	97	70	67	16
169	194	236	216	159	129	110	99	59	56	17
171	249	256	259	234	192	152	110	100	63	18
157	236	253	249	205	175	160	120	72	53	19
92	196	246	297	264	205	198	144	106	100	20
95	191	236	232	234	200	194	137	113	79	21
56	129	262	291	282	270	231	209	167	126	22
49	121	242	268	291	234	220	190	139	99	23
33	56	148	294	276	285	268	254	209	159	24
30	66	140	259	264	282	243	243	195	128	25
12	41	82	146	257	277	272	246	206	175	26
14	28	85	132	246	244	277	249	178	160	27
6	22	54	73	146	287	302	265	215	190	28
10	22	43	78	151	252	259	250	223	164	29
10	19	14	61	83	147	295	296	277	212	30
5	13	23	50	87	113	288	233	219	184	31
4	11	15	36	52	105	134	302	245	247	32
6	6	18	27	56	84	121	257	213	231	33
3	7	8	18	31	56	55	128	225	201	34
3	6	6	9	23	42	72	131	222	219	35
3	4	4	9	22	30	46	98	133	208	36
....	1	8	10	16	43	57	96	127	188	37
....	4	4	12	13	21	17	49	70	122	38
1	4	6	6	7	18	24	37	63	90	39
....	....	2	11	6	10	17	26	32	61	40
....	1	....	4	2	10	25	42	41	67	41
1	1	1	2	2	4	16	18	26	46	42
....	1	4	7	1	7	11	9	18	38	43
....	....	2	5	4	5	10	6	12	19	44
....	....	....	1	3	6	10	7	10	20	45
....	....	1	....	2	3	8	6	9	13	46
....	....	....	2	3	1	7	4	15	18	47
1	....	1	....	3	2	5	4	2	8	48
1	1	....	2	1	7	3	5	3	12	49
....	....	....	1	....	....	4	1	4	5	50
....	....	....	1	....	....	1	4	4	11	51
....	....	1	....	3	1	1	3	2	4	52
....	....	....	1	....	1	....	3	6	7	53
....	....	....	....	....	....	1	1	2	3	54
....	....	....	1	....	....	....	....	2	1	55
....	....	....	....	....	....	....	2	1	3	56
....	....	....	1	1	2	1	....	1	5	57
....	....	....	2	....	1	1	2	....	....	58
....	....	....	....	....	....	....	....	....	....	59
....	....	....	....	....	....	....	....	....	....	60
....	....	....	....	....	....	....	....	....	....	61
....	....	....	....	....	....	....	1	1	....	62
....	....	....	....	....	....	....	....	....	....	63
....	....	....	....	....	....	....	....	....	1	64
....	....	....	....	....	....	....	....	....	....	65
....	....	....	....	....	1	....	....	....	1	66
....	....	....	....	....	....	1	....	....	....	67
....	....	....	....	....	....	1	....	....	....	68
....	....	....	....	....	....	....	....	....	....	69
....	....	2	1	....	2	1	4	1	2	70
1	2	....	....	2	....	1	3	....	1	71

Table 23 — STATE OF NEW YORK (exclusive of New York City): *Births (exclu*

Line number	AGE OF MOTHER		BIRTHS TO				
			31 years	32 years	33 years	34 years	35 years
1	**TOTAL**		**3,386**	**3,420**	**3,087**	**2,889**	**2,783**
2	**Males**		**1,755**	**1,763**	**1,543**	**1,472**	**1,435**
3	**Females**		**1,631**	**1,657**	**1,544**	**1,417**	**1,348**
4	Under 15 years	M	....	2	....	....	1
5		F	....	....	....	....	....
6	15 years	M	1	2	1	1	....
7		F	....	2	....	1	....
8	16 years	M	2	2	1	1	1
9		F	2	3	3	1	1
10	17 years	M	6	4	1	2	3
11		F	4	2	1	1	3
12	18 years	M	12	12	7	8	8
13		F	9	10	11	10	5
14	19 years	M	19	29	19	6	8
15		F	19	27	13	7	10
16	20 years	M	28	29	17	20	13
17		F	26	24	20	16	14
18	21 years	M	44	33	25	21	18
19		F	46	34	28	25	13
20	22 years	M	49	53	35	29	17
21		F	51	55	40	17	22
22	23 years	M	80	78	57	41	29
23		F	63	65	49	39	27
24	24 years	M	72	87	40	64	50
25		F	102	69	56	71	37
26	25 years	M	145	94	67	56	77
27		F	104	104	70	45	72
28	26 years	M	156	138	97	71	68
29		F	151	112	89	67	54
30	27 years	M	164	132	117	68	68
31		F	145	115	129	86	76
32	28 years	M	183	159	141	106	84
33		F	177	166	140	85	101
34	29 years	M	194	181	118	117	100
35		F	184	151	134	135	98
36	30 years	M	172	186	153	132	129
37		F	183	164	138	118	113
38	31 years	M	186	173	155	127	120
39		F	160	179	137	124	110
40	32 years	M	102	172	159	159	117
41		F	77	180	142	145	136
42	33 years	M	54	80	151	142	119
43		F	44	76	156	139	120
44	34 years	M	29	38	73	136	132
45		F	29	42	81	125	127
46	35 years	M	21	29	38	64	142
47		F	17	23	42	62	95
48	36 years	M	8	22	32	40	64
49		F	10	21	22	46	57
50	37 years	M	12	7	15	27	22
51		F	8	13	12	27	31
52	38 years	M	6	12	8	19	19
53		F	8	8	10	11	10
54	39 years	M	1	6	4	9	15
55		F	3	4	7	5	9
56	40 years	M	3	1	4	3	6
57		F	1	5	7	4	2
58	41 years	M	....	....	1	....	1
59		F	4	....	2	3	4
60	42 years	M	2	1	2	....	1
61		F	2	1	1	....	....
62	43 years	M	1	1	2	....	....
63		F	....	....	....	....	....
64	44 years	M	1	....	....	....	....
65		F	....	....	3	1	....
66	45–49 years	M	....	....	....	1	1
67		F	....	2	....	1	1
68	50 years and over	M	....	....	....	....	1
69		F	....	....	....	....	....
70	Age unknown	M	2	....	3	2	1
71		F	2	....	1	....	....

stillbirths), by sex and the color and age of mother by age of father: 1921 — (Continued)

WHITE MOTHERS											
FATHER											
37 years	38 years	39 years	40 years	41 years	42 years	43 years	44 years	45–49 years	50 years and over	Age unknown	Line number
2,198	1,962	1,744	1,510	1,154	1,213	893	801	2,461	1,274	812	1
1,130	1,011	905	813	591	644	470	398	1,252	671	413	2
1,068	951	839	697	563	569	423	403	1,209	603	399	3
......	......	......	......	......	......	......	......	1	1	9	4
......	......	......	1	......	......	......	......	......	......	5	5
1	1	......	......	......	......	......	......	......	......	18	6
......	......	......	1	......	......	......	......	......	......	12	7
1	1	......	......	......	......	......	......	1	1	27	8
2	......	1	......	......	......	......	......	......	......	22	9
3	2	......	......	......	......	......	1	1	1	27	10
2	1	......	1	1	......	......	......	......	......	42	11
3	1	......	1	2	2	......	1	......	2	52	12
2	......	1	......	1	......	1	1	3	1	45	13
7	2	1	5	2	2	3	1	2	1	49	14
7	2	7	2	......	3	2	1	5	1	54	15
4	8	4	9	2	1	3	1	4	4	42	16
8	8	6	9	2	3	......	3	6	2	37	17
8	9	8	7	5	5	3	2	7	8	31	18
4	5	6	6	3	3	2	1	5	4	25	19
19	9	7	8	......	6	4	3	9	11	29	20
17	12	8	8	1	7	2	3	5	2	14	21
15	18	8	6	5	5	2	6	14	11	13	22
20	22	8	8	2	4	8	3	15	8	21	23
22	23	12	19	10	9	2	2	12	11	17	24
19	15	11	14	8	3	6	7	6	9	12	25
33	21	16	9	5	7	4	6	8	14	11	26
30	25	14	11	9	5	6	1	16	11	11	27
36	27	18	13	7	7	9	4	21	18	11	28
32	26	22	13	6	11	6	3	18	11	16	29
58	25	29	24	18	11	9	5	28	11	11	30
56	46	21	18	9	9	3	4	22	20	10	31
51	68	37	20	19	20	13	11	25	10	7	32
45	62	30	21	10	14	11	8	26	13	9	33
58	45	57	22	11	19	12	7	35	24	7	34
35	44	59	22	14	16	15	13	32	21	5	35
70	58	40	44	28	15	11	10	31	17	5	36
70	44	40	37	20	20	15	10	36	20	7	37
69	50	51	26	30	24	16	13	40	23	4	38
64	67	38	35	30	24	14	16	33	14	6	39
88	73	53	36	30	39	17	21	47	23	......	40
99	74	52	33	30	44	17	12	40	13	4	41
89	82	47	40	37	33	36	22	54	28	4	42
96	83	60	45	39	40	26	19	49	33	2	43
101	99	76	70	25	38	21	43	71	26	2	44
80	57	64	37	46	27	26	30	56	26	5	45
97	87	81	72	46	45	32	26	84	43	7	46
106	72	76	63	43	39	24	31	84	39	3	47
107	76	88	79	64	53	39	33	84	39	8	48
94	75	74	77	51	49	29	25	89	29	2	49
87	84	74	83	50	62	39	28	93	34	1	50
94	74	71	50	50	51	38	24	78	29	2	51
49	71	74	75	52	76	28	30	100	46	7	52
48	64	74	59	51	60	44	41	101	35	5	53
25	26	66	56	42	51	44	30	85	54	......	54
27	31	50	47	43	47	44	37	107	40	1	55
15	28	27	42	51	46	38	25	87	44	1	56
11	20	21	32	41	36	26	29	92	39	2	57
6	9	19	25	31	38	28	23	70	39	......	58
5	8	17	21	32	19	25	24	68	34	......	59
4	7	3	13	10	20	28	19	80	44	......	60
1	9	5	18	10	23	18	22	79	45	......	61
3	1	6	7	4	6	16	9	57	29	......	62
1	2	1	6	8	9	8	19	44	37	......	63
......	......	1	1	3	2	8	11	34	13	......	64
......	2	......	1	2	2	5	12	50	24	1	65
1	......	1	......	1	1	5	5	56	38	......	66
......	1	1	......	1	1	2	3	48	38	3	67
......	......	......	......	1	......	......	......	......	1	1	68
......	......	......	......	......	......	......	......	......	4	......	69
......	......	1	1	......	1	......	......	2	2	12	70
2	......	1	1	......	......	......	1	1	1	16	71

Table 23 — State of New York (exclusive of New York City): *Births (excl*

Line number	AGE OF MOTHER		All births	BIRTHS TO			
				16 years	17 years	18 years	19 years
1	**TOTAL**		31,614	....	5	9	32
2	**Males**		16,282	....	1	4	13
3	**Females**		15,332	....	4	5	19
4	Under 15 years	M	1	....	....	....	....
5		F	1	....	....	....	....
6	15 years	M	4	....	1	....	....
7		F	6	....	....	....	....
8	16 years	M	37	....	....	1	2
9		F	29	....	2	2	1
10	17 years	M	96	....	....	1	....
11		F	79	....	....	1	1
12	18 years	M	181	....	....	2	4
13		F	180	....	1	....	3
14	19 years	M	326	....	....	....	3
15		F	273	....	....	1	6
16	20 years	M	411	....	....	....	1
17		F	350	....	....	....	3
18	21 years	M	453	....	....	....	....
19		F	445	....	....	....	2
20	22 years	M	592	....	....	....	1
21		F	575	....	....	....	1
22	23 years	M	699	....	....	....	2
23		F	627	....	....	....	2
24	24 years	M	836	....	....	....	....
25		F	781	....	1	....	....
26	25 years	M	891	....	....	....	....
27		F	849	....	....	....	....
28	26 years	M	964	....	....	....	....
29		F	895	....	....	....	....
30	27 years	M	919	....	....	....	....
31		F	881	....	....	....	....
32	28 years	M	1,044	....	....	....	....
33		F	991	....	....	....	....
34	29 years	M	938	....	....	....	....
35		F	831	....	....	....	....
36	30 years	M	1,056	....	....	....	....
37		F	1,015	....	....	1	....
38	31 years	M	711	....	....	....	....
39		F	654	....	....	....	....
40	32 years	M	809	....	....	....	....
41		F	782	....	....	....	....
42	33 years	M	776	....	....	....	....
43		F	736	....	....	....	....
44	34 years	M	665	....	....	....	....
45		F	671	....	....	....	....
46	35 years	M	710	....	....	....	....
47		F	674	....	....	....	....
48	36 years	M	654	....	....	....	....
49		F	619	....	....	....	....
50	37 years	M	533	....	....	....	....
51		F	528	....	....	....	....
52	38 years	M	581	....	....	....	....
53		F	537	....	....	....	....
54	39 years	M	370	....	....	....	....
55		F	357	....	....	....	....
56	40 years	M	361	....	....	....	....
57		F	344	....	....	....	....
58	41 years	M	178	....	....	....	....
59		F	145	....	....	....	....
60	42 years	M	188	....	....	....	....
61		F	176	....	....	....	....
62	43 years	M	105	....	....	....	....
63		F	115	....	....	....	....
64	44 years	M	82	....	....	....	....
65		F	72	....	....	....	....
66	45–49 years	M	89	....	....	....	....
67		F	89	....	....	....	....
68	50 years and over	M	5	....	....	....	....
69		F	1	....	....	....	....
70	Age unknown	M	17	....	....	....	....
71		F	44	....	....	....	....

irths), by sex and the color and age of mother by age of father: 1921 — (Continued)

WHITE MOTHERS

R

s	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years	30 years	Line number
185	258	439	729	987	1,231	1,431	1,692	1,678	1,856	1
98	134	224	399	525	686	697	846	873	922	2
97	124	215	330	462	551	734	846	800	934	3
...	....	....	....	....	....	1	....	....	....	4
...	....	....	....	....	....	....	....	....	....	5
...	....	1	....	....	....	1	....	....	....	6
...	1	1	1	....	....	....	1	....	....	7
1	....	2	2	4	9	1	2	4	1	8
1	2	2	5	3	....	4	2	2	....	9
6	7	10	15	11	14	11	7	5	2	10
4	6	6	16	10	11	4	3	1	3	11
9	10	13	19	24	26	10	21	5	4	12
17	14	14	6	27	11	22	16	5	13	13
14	26	30	35	37	35	42	22	19	11	14
16	12	27	30	30	29	27	25	19	15	15
22	20	23	59	42	43	33	39	36	25	16
11	19	25	45	37	53	36	19	21	31	17
17	21	30	38	50	61	49	42	29	26	18
18	24	30	32	57	35	41	52	42	27	19
4	21	30	43	52	71	52	61	51	44	20
13	24	36	48	50	61	61	60	60	30	21
6	9	30	54	72	68	75	61	55	63	22
3	8	32	43	51	59	77	76	54	64	23
1	6	20	43	82	69	88	76	91	71	24
2	2	13	42	64	79	81	106	66	65	25
3	2	13	29	53	91	73	82	103	87	26
1	3	6	22	49	57	109	93	98	77	27
3	4	7	18	39	88	78	101	97	89	28
5	4	8	17	29	66	81	104	72	85	29
...	2	1	10	19	30	77	94	90	80	30
2	....	3	7	19	44	80	73	79	107	31
1	2	4	9	14	23	38	97	89	101	32
...	2	3	4	12	16	48	93	83	116	33
...	1	2	9	6	22	24	53	80	92	34
1	....	3	2	10	8	21	30	85	70	35
...	1	3	2	8	8	18	31	49	100	36
...	1	3	....	4	9	18	43	35	106	37
1	....	....	2	1	5	6	15	27	42	38
...	....	3	2	....	4	8	9	28	40	39
...	1	4	2	4	5	7	12	12	38	40
1	1	....	2	1	5	7	11	12	25	41
...	....	....	....	1	2	2	11	7	15	42
...	....	....	1	....	1	7	10	13	22	43
...	....	....	....	....	3	2	1	6	9	44
1	....	....	3	....	1	2	4	5	10	45
...	1	1	....	3	2	4	6	6	12	46
...	....	....	1	2	2	4	5	5	9	47
...	....	....	....	....	....	1	2	4	5	48
...	1	....	....	3	....	1	2	3	9	49
...	....	....	....	1	....	....	2	....	1	50
...	....	....	....	....	....	3	1	4	3	51
...	....	....	....	1	1	3	5	3	4	52
1	....	....	....	....	....	....	4	3	2	53
...	....	....	....	....	....	....	1	1	....	54
...	....	....	....	....	....	1	2	1	1	55
...	....	....	....	....	1	....	....	1	....	56
...	....	....	....	2	....	....	....	2	1	57
...	....	....	....	....	....	....	....	1	....	58
...	....	....	....	....	....	....	....	....	....	59
...	....	....	....	....	2	1	1	....	....	60
...	....	....	....	....	....	....	....	....	1	61
...	....	....	....	....	1	....	....	....	....	62
...	....	....	....	1	....	....	....	....	....	63
...	....	....	1	....	....	....	....	....	....	64
...	....	....	....	....	....	....	....	1	....	65
...	....	....	....	....	....	....	....	....	....	66
...	....	....	....	....	....	....	....	....	1	67
...	....	....	....	....	....	....	....	1	....	68
...	....	....	....	....	....	....	....	....	....	69
...	....	....	....	1	....	....	1	1	....	70
...	....	....	....	1	....	....	2	1	1	71

Table 23 — State of New York (exclusive of New York City): *Births (exclusi*

Line number	AGE OF MOTHER		BIRTHS TO FOR				
			A				
			31 years	32 years	33 years	34 years	35 years
1	**TOTAL**		1,541	1,734	1,820	1,638	1,752
2	**Males**		794	889	926	871	935
3	**Females**		747	845	894	767	817
4	Under 15 years	M	......	......	......	......	......
5		F	......	......	......	......	......
6	15 years	M	......	......	......	......	......
7		F	......	......	......	......	1
8	16 years	M	......	......	1	......	......
9		F	1	......	1	......	......
10	17 years	M	1	......	1	2	1
11		F	5	1	......	......	......
12	18 years	M	5	3	7	1	4
13		F	4	4	5	3	2
14	19 years	M	7	7	5	5	1
15		F	2	6	2	2	2
16	20 years	M	16	8	14	8	6
17		F	12	11	6	5	1
18	21 years	M	22	24	12	7	4
19		F	21	21	12	13	3
20	22 years	M	23	43	25	21	17
21		F	29	29	18	13	14
22	23 years	M	50	26	36	30	16
23		F	36	25	29	16	16
24	24 years	M	64	39	41	47	29
25		F	39	41	42	35	42
26	25 years	M	60	75	35	43	47
27		F	68	60	57	28	45
28	26 years	M	72	68	65	42	60
29		F	66	61	69	53	46
30	27 years	M	80	61	71	49	63
31		F	66	81	58	51	45
32	28 years	M	79	106	100	66	69
33		F	78	104	73	70	61
34	29 years	M	78	72	82	88	63
35		F	79	72	86	73	66
36	30 years	M	83	91	95	86	109
37		F	78	88	94	83	85
38	31 years	M	63	66	76	54	60
39		F	68	62	58	49	57
40	32 years	M	37	83	79	70	70
41		F	32	85	76	62	66
42	33 years	M	29	56	85	75	84
43		F	16	28	88	52	78
44	34 years	M	6	16	33	83	70
45		F	16	25	52	61	66
46	35 years	M	9	13	24	37	77
47		F	11	16	27	34	57
48	36 years	M	......	18	14	24	38
49		F	7	8	16	23	27
50	37 years	M	4	2	9	14	20
51		F	7	6	9	15	20
52	38 years	M	2	7	6	8	8
53		F	5	4	6	14	9
54	39 years	M	2	1	3	5	10
55		F	......	2	4	3	1
56	40 years	M	2	3	4	3	3
57		F	......	4	3	7	2
58	41 years	M	......	......	......	......	3
59		F	1	1	1	......	......
60	42 years	M	......	1	1	2	......
61		F	......	......	......	......	3
62	43 years	M	......	......	1	......	1
63		F	......	......	1	1	1
64	44 years	M	......	......	......	......	......
65		F	......	......	......	......	......
66	45–49 years	M	......	......	......	1	......
67		F	......	......	......	......	......
68	50 years and over	M	......	......	......	......	......
69		F	......	......	......	......	......
70	Age unknown	M	......	......	1	......	2
71		F	......	......	1	1	1

irths), by sex and the color and age of mother by age of father: **1921 — (Continued)**

WHITE MOTHERS										
38 years	39 years	40 years	41 years	42 years	43 years	44 years	45–49 years	50 years and over	Age un-known	Line number
1,493	1,256	1,300	741	906	605	557	1,880	662	122	1
760	661	658	397	484	310	259	985	329	65	2
733	595	642	344	422	295	298	895	333	57	3
......	......	......	......	......	......	......	......	......	......	4
......	......	......	......	......	......	......	......	......	1	5
......	......	......	......	......	......	......	......	......	......	6
......	......	......	......	......	......	......	......	......	1	7
......	......	......	......	1	......	......	......	......	4	8
......	......	......	......	......	......	......	......	......	......	9
......	......	......	......	......	......	......	......	......	1	10
......	......	......	......	......	......	......	......	......	2	11
......	......	1	......	......	......	......	1	......	3	12
1	......	......	......	......	......	......	......	......	4	13
1	1	......	......	......	1	......	1	......	9	14
2	......	......	......	1	......	......	1	......	5	15
1	3	1	......	......	......	......	1	......	4	16
2	1	......	......	1	......	......	......	1	3	17
3	1	......	1	......	......	1	1	1	5	18
......	3	......	......	1	......	......	......	......	2	19
5	5	1	2	1	......	......	1	......	6	20
2	1	......	2	4	......	......	......	1	2	21
2	1	5	3	2	1	......	3	3	3	22
6	5	5	......	1	1	......	3	......	2	23
10	8	6	......	1	......	1	2	1	3	24
12	5	3	......	2	3	......	5	1	1	25
20	6	8	......	4	1	2	5	1	1	26
12	4	15	5	1	1	4	5	3	3	27
16	15	13	5	5	4	2	3	1	3	28
19	13	10	3	5	1	4	7	1	2	29
33	19	18	7	11	3	4	11	1	3	30
24	16	11	7	3	1	2	7	1	2	31
51	26	22	14	10	7	5	14	1	3	32
51	24	18	4	6	8	2	16	5	2	33
38	38	27	13	9	3	1	14	6	3	34
34	26	19	10	11	10	4	15	10	......	35
54	38	58	19	22	9	5	26	8	1	36
64	39	53	16	14	13	5	20	14	3	37
42	36	28	25	21	12	7	21	5	1	38
41	29	29	25	20	7	6	15	6	1	39
56	45	44	28	31	9	10	28	9	2	40
58	45	42	21	33	11	9	33	8	1	41
64	49	43	18	23	30	18	25	10	......	42
58	55	42	20	22	20	24	23	12	......	43
60	50	40	28	34	20	23	35	13	1	44
52	55	44	25	33	16	21	41	10	1	45
64	71	49	31	26	20	15	87	13	1	46
68	54	69	37	35	18	19	71	12	2	47
68	60	65	25	52	27	23	70	24	1	48
64	48	59	36	42	24	21	81	17	1	49
47	58	54	48	44	32	21	74	22	......	50
50	46	49	32	36	36	25	81	13	......	51
72	59	52	39	58	37	22	99	30	1	52
62	47	65	30	45	31	32	94	33	1	53
28	40	47	29	29	25	27	63	27	1	54
21	49	38	29	32	26	26	71	27	1	55
16	21	49	29	36	26	25	105	27	1	56
15	19	46	17	34	21	39	80	36	3	57
3	4	12	19	19	19	9	62	22	......	58
4	4	10	14	10	16	12	45	21	1	59
6	4	9	10	31	11	10	63	28	......	60
9	4	9	8	15	16	17	55	29	......	61
1	1	3	2	6	6	11	49	17	......	62
1	1	2	1	9	10	15	51	17	......	63
1	2	......	1	3	6	15	31	21	......	64
1	1	2	1	3	3	6	37	16	1	65
2	......	1	1	5	1	2	39	34	......	66
......	......	2	1	2	2	4	37	36	1	67
......	......	1	......	......	......	......	1	2	......	68
......	......	......	......	......	......	......	......	1	......	69
1	......	1	......	......	......	......	......	2	4	70
......	1	......	......	1	......	1	1	1	8	71

Table 23 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusiv*

Line number	AGE OF MOTHER		All births	16 years	17 years	18 years	19 years
1	**TOTAL**		1,027			6	8
2	**Males**		534			3	5
3	**Females**		493			3	3
4	Under 15 years	M	2				
5		F					
6	15 years	M	4				
7		F	1			1	
8	16 years	M	10				2
9		F	13			1	1
10	17 years	M	26			2	
11		F	10				
12	18 years	M	28				2
13		F	28			1	
14	19 years	M	35				
15		F	30				1
16	20 years	M	38				
17		F	35				1
18	21 years	M	34			1	1
19		F	32				
20	22 years	M	19				
21		F	27				
22	23 years	M	29				
23		F	24				
24	24 years	M	29				
25		F	32				
26	25 years	M	28				
27		F	15				
28	26 years	M	26				
29		F	25				
30	27 years	M	33				
31		F	19				
32	28 years	M	29				
33		F	27				
34	29 years	M	27				
35		F	20				
36	30 years	M	18				
37		F	19				
38	31 years	M	11				
39		F	21				
40	32 years	M	14				
41		F	14				
42	33 years	M	13				
43		F	13				
44	34 years	M	11				
45		F	12				
46	35 years	M	14				
47		F	11				
48	36 years	M	7				
49		F	15				
50	37 years	M	6				
51		F	12				
52	38 years	M	15				
53		F	14				
54	39 years	M	5				
55		F	6				
56	40 years	M	10				
57		F	5				
58	41 years	M					
59		F	2				
60	42 years	M	4				
61		F	4				
62	43 years	M	2				
63		F	1				
64	44 years	M	4				
65		F	1				
66	45–49 years	M	1				
67		F	3				
68	50 years and over	M	2				
69		F					
70	Age unknown	M					
71		F	2				

stillbirths), by sex to colored mothers and the age of mother by age of father: **1921** — *(Cont'd)*

COLORED MOTHERS										
FATHER										
21 years	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years	30 years	Line number
37	46	57	66	54	43	36	55	55	46	1
17	22	32	33	27	27	18	27	32	26	2
20	24	25	33	27	16	18	28	23	20	3
....	....	....	....	....	....	....	....	....	....	4
....	....	....	....	....	....	....	....	....	....	5
....	....	1	....	....	....	....	....	....	....	6
....	....	....	....	....	....	....	....	....	....	7
3	....	2	....	1	....	....	....	1	....	8
1	....	2	1	....	1	....	1	1	1	9
4	3	5	1	1	1	1	1	....	....	10
1	3	2	1	2	1	....	....	....	....	11
1	3	4	4	4	....	1	2	1	1	12
4	1	2	2	5	2	....	2	....	....	13
4	5	5	5	....	1	1	2	1	....	14
3	7	1	2	3	....	....	....	....	3	15
2	8	5	5	6	3	4	1	....	....	16
5	5	6	4	2	1	3	3	2	1	17
3	2	3	2	6	3	....	....	2	2	18
2	5	5	5	2	1	....	1	2	....	19
....	3	2	2	2	2	1	1	1	....	20
....	2	2	2	3	3	2	2	2	1	21
....	2	2	4	....	1	3	5	3	2	22
....	1	2	5	4	....	5	3	1	....	23
....	....	....	5	1	3	....	2	4	2	24
....	....	2	6	3	2	2	1	2	2	25
....	....	1	3	1	3	2	1	3	2	26
2	....	....	1	1	1	....	1	1	1	27
....	1	1	....	....	2	....	3	4	1	28
....	....	....	2	....	1	2	6	....	1	29
....	....	1	1	....	3	....	4	5	4	30
1	....	....	....	....	....	1	3	3	1	31
....	....	....	....	2	1	1	1	2	3	32
1	....	....	2	1	1	1	3	2	6	33
....	....	....	....	....	2	1	1	2	5	34
....	....	....	....	....	2	....	....	1	1	35
....	....	....	....	....	....	....	1	....	2	36
....	....	1	....	....	....	....	1	2	1	37
....	....	....	....	1	2	....	....	2	1	38
....	....	....	....	1	....	....	....	1	1	39
....	....	....	1	1	....	....	2	....	....	40
....	....	....	....	....	....	....	....	1	....	41
....	....	....	....	....	....	....	....	....	1	42
....	....	....	....	....	....	....	....	....	....	43
....	....	....	....	....	....	1	....	....	....	44
....	....	....	....	....	....	....	1	....	....	45
....	....	....	....	....	....	....	....	1	....	46
....	....	....	....	....	....	....	....	....	....	47
....	....	....	....	....	....	....	....	....	....	48
....	....	....	....	....	....	1	....	1	....	49
....	....	....	....	....	....	....	....	....	....	50
....	....	....	....	....	....	....	....	....	....	51
....	....	....	....	....	....	....	....	....	....	52
....	....	....	....	....	....	1	....	....	....	53
....	....	....	....	....	....	....	....	....	....	54
....	....	....	....	....	....	....	....	1	....	55
....	....	....	....	1	....	....	....	....	....	56
....	....	....	....	....	....	....	....	....	....	57
....	....	....	....	....	....	....	....	....	....	58
....	....	....	....	....	....	....	....	....	....	59
....	....	....	....	....	....	....	....	....	....	60
....	....	....	....	....	....	....	....	....	....	61
....	....	....	....	....	....	....	....	....	....	62
....	....	....	....	....	....	....	....	....	....	63
....	....	....	....	....	....	....	....	....	....	64
....	....	....	....	....	....	....	....	....	....	65
....	....	....	....	....	....	....	....	....	....	66
....	....	....	....	....	....	....	....	....	....	67
....	....	....	....	....	....	....	....	....	....	68
....	....	....	....	....	....	....	....	....	....	69
....	....	....	....	....	....	....	....	....	....	70
....	....	....	....	....	....	....	....	....	....	71

Table 23 — STATE OF NEW YORK (exclusive of New York City): *Births* (

Line number	AGE OF MOTHER		31 years	32 years	33 years	34 years	35 years
1	**TOTAL**		25	31	36	23	
2	**Males**		15	11	21	12	
3	**Females**		10	20	15	11	
4	Under 15 years	M					
5		F					
6	15 years	M					
7		F					
8	16 years	M				1	
9		F					
10	17 years	M	1				
11		F					
12	18 years	M					
13		F				1	
14	19 years	M			1		
15		F		1			
16	20 years	M	1	2	2		
17		F					
18	21 years	M					
19		F	1			1	
20	22 years	M	1				
21		F	1	2			
22	23 years	M	1				
23		F			1		
24	24 years	M	1		1		
25		F		3			
26	25 years	M	1	2	3		
27		F		2		2	
28	26 years	M		1	5		
29		F	1	1	3		
30	27 years	M	1	2		2	
31		F	1	2	1		
32	28 years	M	2	2	2	1	
33		F	2				
34	29 years	M	2	1		1	
35		F	3	1		1	
36	30 years	M	2		2	2	
37		F			4	1	
38	31 years	M			1	1	
39		F	1	3	2	1	
40	32 years	M	1			1	
41		F			1	2	
42	33 years	M			3	1	
43		F		1	2	1	
44	34 years	M		1			
45		F		1		1	
46	35 years	M					
47		F		1	1		
48	36 years	M	1				
49		F					
50	37 years	M					
51		F		2			
52	38 years	M				2	
53		F					
54	39 years	M					
55		F					
56	40 years	M					
57		F					
58	41 years	M					
59		F					
60	42 years	M					
61		F					
62	43 years	M					
63		F					
64	44 years	M					
65		F					
66	45–49 years	M			1		
67		F					
68	50 years and over	M					
69		F					
70	Age unknown	M					
71		F					

), by sex to colored mothers and the age of mother by age of father: **1921** — (Concl'd)

MOTHERS										
38 years	39 years	40 years	41 years	42 years	43 years	44 years	45–49 years	50 years and over	Age unknown	Line number
33	**19**	**31**	**13**	**25**	**11**	**22**	**52**	**32**	**57**	1
12	**10**	**13**	**7**	**16**	**6**	**10**	**27**	**17**	**31**	2
21	**9**	**18**	**6**	**9**	**5**	**12**	**25**	**15**	**26**	3
......	......	......	......	......	......	......	......	......	2	4
......	......	......	......	......	......	......	......	......	......	5
......	......	......	......	......	......	......	......	......	2	6
......	......	......	......	......	......	......	......	......	......	7
......	......	......	......	......	......	......	......	......	......	8
......	......	......	......	......	......	......	......	......	3	9
......	......	......	......	......	......	......	......	......	5	10
......	......	......	......	......	......	......	......	......	......	11
......	......	......	......	......	......	......	......	......	4	12
......	......	1	......	......	1	1	......	......	3	13
......	......	......	......	......	......	......	1	1	5	14
......	......	......	......	......	......	......	......	......	4	15
......	1	......	......	......	......	......	......	......	......	16
......	......	......	......	......	......	......	......	......	1	17
......	......	......	......	......	......	......	1	......	4	18
......	1	......	......	1	......	1	......	......	2	19
......	......	......	......	......	......	......	......	......	2	20
1	......	2	......	......	......	1	......	......	......	21
......	2	......	......	......	......	......	......	......	1	22
......	1	......	......	......	......	......	......	......	1	23
1	1	......	......	......	......	......	1	......	3	24
......	1	2	......	......	......	1	......	......	2	25
1	1	......	......	......	......	......	2	......	......	26
......	......	......	......	......	......	......	1	......	1	27
......	1	1	2	1	......	......	......	1	1	28
1	......	......	......	......	......	......	1	......	2	29
......	1	......	......	1	......	1	......	1	......	30
......	1	1	1	......	1	......	1	......	......	31
1	1	......	1	1	......	1	2	1	......	32
......	......	2	......	......	......	......	2	1	1	33
1	......	......	......	1	1	3	1	......	......	34
2	......	......	......	1	......	......	1	1	1	35
1	......	2	......	......	......	......	1	2	......	36
2	......	1	1	......	1	......	2	......	......	37
......	......	......	......	1	......	......	......	......	1	38
3	......	......	1	......	......	......	3	......	......	39
1	1	......	1	1	1	......	1	......	1	40
2	1	......	......	......	......	......	1	1	......	41
......	......	......	1	......	......	......	2	1	......	42
......	1	2	......	......	......	......	2	1	1	43
......	......	1	......	3	1	......	1	1	......	44
3	......	......	......	2	......	......	1	......	......	45
......	......	2	......	2	......	......	2	1	......	46
2	......	1	......	......	......	1	3	......	......	47
3	......	......	......	......	1	......	......	2	......	48
......	......	......	1	1	1	1	......	3	1	49
......	......	2	......	......	......	2	1	......	......	50
2	1	1	1	1	......	2	......	2	......	51
2	1	......	1	4	......	......	3	2	......	52
3	......	1	1	1	......	1	4	1	......	53
......	......	3	......	......	......	......	1	......	......	54
......	......	2	......	1	......	1	......	1	......	55
1	......	1	1	......	1	1	2	2	......	56
......	......	1	......	1	......	......	1	2	......	57
......	......	......	......	......	......	......	......	......	......	58
......	......	......	......	......	......	1	......	......	1	59
......	......	1	......	1	1	......	1	......	......	60
......	2	1	......	......	1	......	......	......	......	61
......	......	......	......	......	......	......	2	......	......	62
......	......	......	......	......	......	......	......	1	......	63
......	......	......	......	......	......	2	2	......	......	64
......	......	......	......	......	......	1	......	......	......	65
......	......	......	......	......	......	......	......	......	......	66
......	......	......	......	......	......	......	2	1	......	67
......	......	......	......	......	......	......	......	2	......	68
......	......	......	......	......	......	......	......	......	......	69
......	......	......	......	......	......	......	......	......	......	70
......	......	......	......	......	......	......	......	......	2	71

Table 24 — STATE OF NEW YORK (exclusive of New York City): ***Births (exclu***
to the size in populati
For total

AGE OF MOTHER	All births	N				
		First child	Second child	Third child	Fourth child	Fifth child
Cities over 200,000 population Total	**20,058**	**6,336**	**4,132**	**2,929**	**2,069**	**1,381**
15 years or less	29	29	......	......	......	......
16 years	85	79	5	1	......	......
17 years	204	188	14	2	......	......
18 years	438	372	63	3	......	......
19 years	598	464	113	20	......	1
20 years	805	562	180	56	6	1
21 years	961	581	252	93	29	6
22 years	1,104	567	330	136	56	10
23 years	1,163	553	318	196	76	14
24 years	1,321	558	334	231	133	50
25 years	1,242	440	340	259	125	47
26 years	1,253	386	317	252	161	95
27 years	1,230	326	308	236	174	105
28 years	1,248	264	292	260	185	127
29 years	1,077	223	232	189	180	111
30 years	1,098	163	238	193	170	129
31 years	807	126	158	132	137	90
32 years	877	116	149	157	118	110
33 years	745	81	127	104	90	103
34 years	632	63	96	83	95	71
35 years	599	54	60	83	95	60
36 years	591	40	69	68	64	59
37 years	465	28	46	52	52	51
38 years	460	20	44	43	50	53
39 years	296	22	14	25	26	27
40 years	260	13	19	23	25	14
41 years	144	5	8	10	8	15
42 years	143	9	4	10	6	16
43 years	67	3	1	4	4	7
44 years	54	1	1	5	1	5
45 years	30	......	......	2	2	3
46 years	17	......	......	......	1	1
47 years	8	......	......	......	......	......
48 years	4	......	......	......	......	......
49 years	2	......	......	......	......	......
50 years or over	......	......	......	......	......	......
Age not stated	1	......	......	1	......	......

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* In determining the number of child in order of birth, previous stillbirths in some ca

s), by age of mother and the number of child in order of birth, arranged according *birth:* **1921**

25, page =

IN ORDER OF BIRTH *

Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
514	**324**	**218**	**137**	**89**	**50**	**25**	**21**	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
2	......	......	......	......	......	......	......	......
4	......	......	......	......	......	......	......	......
10	3	......	......	......	......	......	......	......
22	4	3	2	1	......	......	......	......
28	12	2	......	......	2	......	......	......
31	9	3	2	......	2	......	......	......
41	19	7	4	1	......	1	......	......
43	19	5	5	4	2	......	1	......
54	21	11	4	3	1	2	......	......
46	20	19	12	2	......	1	......	......
51	40	28	14	6	2	3	......	......
41	26	35	16	6	5	2	......	......
35	34	26	20	16	4	1	2	......
33	31	16	14	9	7	4	2	......
24	33	12	15	9	4	2	3	......
19	18	15	2	7	8	3	1	......
11	14	18	5	8	2	4	4	......
7	8	4	7	6	4	2	3	......
6	8	6	5	5	2	......	2	......
4	2	2	3	3	2	......	2	......
......	2	3	6	1	1	......	......	......
2	1	......	1	1	......	......	1	......
......	......	1	......	1	2	......	......	......
......	......	2	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......

n included.

Table 24 — STATE OF NEW YORK (exclusive of New York City): *Births (excl*
to the size in popul

AGE OF MOTHER	All births					
		First child	Second child	Third child	Fourth child	Fifth child
Cities 100,000–200,000 population						
Total	**9,239**	**3,109**	**1,960**	**1,419**	**933**	**608**
15 years or less	12	11	1	......	......	......
16 years	27	26	1	......	......	......
17 years	83	78	5	......	......	......
18 years	191	166	24	1	......	......
19 years	284	228	46	8	2	......
20 years	365	245	95	20	4	1
21 years	444	267	116	44	17	......
22 years	489	274	134	57	18	5
23 years	513	269	134	78	26	5
24 years	587	272	153	93	53	11
25 years	555	206	163	107	51	19
26 years	591	212	154	108	73	27
27 years	569	182	144	122	67	38
28 years	625	150	161	129	86	61
29 years	519	107	120	114	80	48
30 years	524	99	92	122	78	54
31 years	358	72	76	73	50	31
32 years	391	59	79	71	58	45
33 years	365	46	69	59	51	47
34 years	282	28	41	53	34	42
35 years	315	38	45	34	35	43
36 years	262	22	30	43	40	40
37 years	202	17	28	22	26	28
38 years	196	14	15	27	21	24
39 years	150	7	9	11	22	14
40 years	112	3	7	6	16	6
41 years	49	1	8	5	6	4
42 years	80	6	6	9	7	5
43 years	37	1	1	1	7	2
44 years	25	1	......	1	2	3
45 years	17	2	1	1	......	4
46 years	10	......	......	......	1	1
47 years	6	......	1	......	2	......
48 years	2	......	......	......	......	......
49 years	......	......	......	......	......	......
50 years or over	......	......	......	......	......	......
Age not stated	2	......	1	......	......	......

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* In determining the number of child in order of birth, previous stillbirths in some ea

hs), by age of mother and the number of child in order of birth, arranged according f birth: **1921** — (Continued)

D IN ORDER OF BIRTH *

Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
177	127	99	50	22	14	8	7	9
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	1
1	......	......	......	......	......	......	......	......
1	2	......	......	......	......	......	......	......
......	1	1	1	......	......	......	......	......
4	2	1	1	......	......	......	......	1
10	4	......	1	1	......	......	......	......
11	5	2	1	......	1	......	......	2
10	8	3	1	......	......	......	1	......
17	5	1	5	1	......	......	......	......
16	8	4	3	1	......	......	......	......
22	14	11	4	2	1	......	......	......
12	9	12	2	1	1	......	......	1
17	14	3	4	3	......	......	......	......
18	12	14	3	2	3	......	......	1
11	11	14	5	1	2	......	......	......
10	13	10	2	3	3	3	2	......
2	4	4	3	2	......	1	......	1
5	6	8	6	1	1	1	2	......
3	6	3	4	......	......	2	......	......
3	1	4	2	2	2	......	......	......
2	......	1	......	1	......	......	2	......
1	1	2	2	......	......	1	......	......
1	1	1	......	......	......	......	......	......
......	......	......	......	1	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	1

n included.

Table 24 — STATE OF NEW YORK (exclusive of New York City): *Births (exc*
to the size in popul

AGE OF MOTHER	All births	First child	Second child	Third child	Fourth child	Fifth child
Our Lady of Victory Infant Home, Lackawanna						
Total	**261**	**197**	**19**	**20**	**10**	**3**
15 years or less	9	9	......	......	......	......
16 years	8	8	......	......	......	......
17 years	13	13	......	......	......	......
18 years	16	15	......	......	......	......
19 years	18	17	1	......	......	......
20 years	17	17	......	......	......	......
21 years	24	21	2	1	......	......
22 years	16	15	......	......	1	......
23 years	14	11	2	1	......	......
24 years	14	11	2	1	......	......
25 years	14	12	1	......	1	......
26 years	12	7	1	2	1	......
27 years	21	12	3	3	1	1
28 years	7	4	1	......	2	......
29 years	9	2	3	2	1	......
30 years	8	5	......	3	......	......
31 years	4	2	1	......	1	......
32 years	12	7	......	3	......	1
33 years	4	3	......	......	1	......
34 years	3	2	......	1	......	......
35 years	5	1	......	1	1	......
36 years	......	......	......	......	......	......
37 years	3	1	......	......	......	1
38 years	3	2	......	......	......	......
39 years	......	......	......	......	......	......
40 years	3	......	......	2	......	......
41 years	1	......	1	......	......	......
42 years	2	......	1	......	......	......
43 years	......	......	......	......	......	......
44 years	......	......	......	......	......	......
45 years	......	......	......	......	......	......
46 years	......	......	......	......	......	......
47 years	......	......	......	......	......	......
48 years	......	......	......	......	......	......
49 years	......	......	......	......	......	......
50 years or over	1	......	......	......	......	......
Age not stated	......	......	......	......	......	......

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* In determining the number of child in order of birth, previous stillbirths in some c

irths), by age of mother and the number of child in order of birth, arranged according *of birth:* **1921 — (Concluded)**

HILD IN ORDER OF BIRTH *

enth ild	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
2	2	1	......	1	......	......	......	......	3
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	1
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	1
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	1	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	1	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	1	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	1
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	1	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....

been included.

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (ex*
mother, according to the number o

AGE OF MOTHER	All births	NUMBER OF				
		First child	Second child	Third child	Fourth child	Fifth child
Total	**105,969**	**31,336**	**21,864**	**15,975**	**11,237**	**7,916**
15 years or under	152	148	3	......	......	......
16 years	455	433	21	1	......	......
17 years	1,193	1,088	92	11	1	......
18 years	2,551	2,156	351	34	1	1
19 years	3,732	2,824	752	127	16	4
20 years	4,445	2,815	1,241	306	66	6
21 years	5,041	2,831	1,475	546	148	26
22 years	5,467	2,713	1,617	799	241	60
23 years	6,096	2,617	1,740	1,111	457	123
24 years	6,500	2,461	1,809	1,233	658	230
25 years	6,297	2,018	1,684	1,304	752	358
26 years	6,388	1,776	1,678	1,321	857	484
27 years	6,129	1,484	1,557	1,181	902	579
28 years	6,269	1,289	1,434	1,298	949	652
29 years	5,403	977	1,143	1,032	848	626
30 years	5,511	829	1,107	993	840	701
31 years	4,288	621	801	782	638	546
32 years	4,370	525	720	759	680	535
33 years	3,996	391	645	632	544	535
34 years	3,520	322	474	514	534	411
35 years	3,419	280	376	473	469	415
36 years	3,140	190	310	429	390	385
37 years	2,579	157	232	292	330	320
38 years	2,544	130	198	270	307	289
39 years	1,805	86	128	165	199	191
40 years	1,547	57	103	121	164	135
41 years	904	29	66	76	86	109
42 years	845	29	43	68	51	75
43 years	507	17	22	33	42	45
44 years	339	6	14	18	22	30
45 years	200	4	5	13	17	16
46 years	104	......	1	3	9	7
47 years	55	1	3	1	6	2
48 years	26	1	2	1	......	2
49 years	10	......	......	......	1	1
50 years and over	17	3	......	......	1	1
Age not stated	125	18	17	28	11	16

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
BIRTHS — 1921									
4,964	2,863	1,894	1,254	738	448	252	141	127	268
....	......	......	......	......	......	......	......	......	1
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	1
....	......	......	......	......	......	......	......	......	8
....	1	......	......	......	......	......	......	......	8
1	......	......	......	......	......	......	......	......	9
3	......	......	......	......	......	......	......	......	7
4	3	......	......	......	......	......	......	......	15
6	2	......	......	......	......	......	......	......	13
19	5	2	......	......	......	......	......	......	12
29	6	2	......	1	......	......	......	......	18
62	17	1	2	1	......	......	......	......	15
101	32	7	3	1	......	......	......	......	16
158	51	19	9	2	......	......	......	......	23
201	96	21	11	9	2	......	......	......	16
283	151	69	13	6	1	4	......	......	15
234	148	61	22	8	2	4	2	......	13
324	194	95	49	16	7	2	1	2	12
356	221	131	57	31	17	4	2	2	7
382	249	133	72	36	14	12	2	3	4
352	278	159	106	56	19	11	6	2	4
340	309	186	134	51	33	13	5	3	5
283	231	179	114	70	37	14	9	9	10
261	245	206	148	98	63	25	16	10	8
200	170	161	128	75	37	27	21	10	6
172	156	161	117	86	50	25	15	15	3
86	95	77	73	35	41	29	10	9	5
81	70	87	87	57	35	24	19	14	2
42	53	61	33	43	25	18	13	17	2
23	37	34	41	17	28	21	10	11	1
24	21	18	14	10	22	8	6	12	....
11	7	15	11	17	3	6	2	3	1
6	7	3	3	6	5	2	2	3	....
4	1	1	2	2	3	3	......	1	....
......	2	......	3	1	1	......	......	......	....
1	......	2	1	1	2	......	......	1	....
5	5	3	1	2	1	......	......	......	8

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive mother, according to the number of child*

AGE OF MOTHER	All births	First child	Second child	Third child	Fourth child	Fifth child	Sixth child
		NUMBER OF CHILD					
		TOTAL CHILDREN BORN					
Total	**104,942**	**31,017**	**21,661**	**15,836**	**11,139**	**7,836**	**5,544**
15 years or under	145	141	3	......	......	......	......
16 years	432	412	19	1	......	......	......
17 years	1,157	1,057	89	9	1	......	......
18 years	2,495	2,115	336	34	1	1	......
19 years	3,667	2,785	733	121	16	4	......
20 years	4,372	2,777	1,215	301	62	6	1
21 years	4,975	2,805	1,448	538	144	25	5
22 years	5,421	2,695	1,605	787	237	60	15
23 years	6,043	2,604	1,728	1,095	451	119	25
24 years	6,439	2,442	1,792	1,220	651	227	70
25 years	6,254	2,011	1,673	1,292	747	353	113
26 years	6,337	1,764	1,665	1,313	847	478	173
27 years	6,077	1,472	1,544	1,172	894	575	204
28 years	6,213	1,282	1,428	1,286	944	639	381
29 years	5,356	972	1,139	1,024	840	616	413
30 years	5,474	825	1,103	990	835	698	467
31 years	4,256	616	798	777	634	539	401
32 years	4,342	523	717	756	673	533	447
33 years	3,970	388	643	630	542	529	418
34 years	3,497	321	471	509	530	409	365
35 years	3,394	279	375	471	465	410	409
36 years	3,118	190	307	428	387	382	356
37 years	2,561	156	230	289	328	319	280
38 years	2,515	127	197	268	306	287	209
39 years	1,794	86	128	165	199	191	199
40 years	1,532	56	103	120	163	134	166
41 years	902	29	66	76	85	109	78
42 years	837	38	43	68	50	74	92
43 years	504	17	22	33	41	45	41
44 years	334	6	13	18	22	30	25
45 years	198	4	5	13	16	16	10
46 years	104	......	1	3	9	7	8
47 years	54	1	3	1	6	2	5
48 years	26	1	2	1	......	2	3
49 years	9	......	......	......	1	1	1
50 years and over	15	2	......	......	1	1	4
Age not stated	123	18	17	27	11	15	10

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
TO WHITE MOTHERS									
4,024	2,827	1,872	1,235	729	440	250	140	125	267
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	8
......	1	......	......	......	......	......	......	......	7
1	......	......	......	......	......	......	......	......	9
3	......	......	......	......	......	......	......	......	7
4	3	......	......	......	......	......	......	......	15
6	2	......	......	......	......	......	......	......	13
18	5	2	......	......	......	......	......	......	12
39	6	1	......	1	......	......	......	......	18
61	17	1	2	1	......	......	......	......	15
97	32	7	3	1	......	......	......	......	16
154	48	18	8	2	......	......	......	......	23
199	94	21	11	9	2	......	......	......	16
275	148	65	13	5	1	4	......	......	15
234	145	61	22	8	2	4	2	......	13
320	192	94	47	16	7	2	1	2	12
355	218	130	55	31	16	4	2	2	7
379	248	133	71	36	14	12	2	3	4
351	276	156	106	56	17	11	6	2	4
338	305	184	133	50	33	13	5	2	5
281	230	177	114	69	36	14	9	9	10
259	242	201	144	95	62	24	16	18	8
199	166	161	125	74	37	27	21	10	6
170	153	161	115	85	48	25	15	15	3
86	95	77	72	35	41	29	10	9	5
80	69	86	87	57	35	23	19	14	2
42	53	61	32	43	25	18	12	17	2
23	36	33	41	17	28	21	10	10	1
24	21	18	14	9	22	8	6	12	......
11	7	15	11	17	3	6	2	3	1
5	7	3	3	6	5	2	2	3	......
4	1	1	2	2	3	3	......	1	......
......	2	......	2	1	1	......	......	......	......
1	......	2	1	1	1	......	......	1	......
5	5	3	1	2	1	......	......	......	8

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births*
mother, according to the numbe

AGE OF MOTHER	All births	Numbe				
		First child	Second child	Third child	Fourth child	Fifth child
		Total Children Born				
Total	73,306	25,513	16,993	11,232	6,964	4,347
15 years or under	132	128	3	......	......	......
16 years	365	351	14	......	......	......
17 years	982	908	66	7	......	......
18 years	2,134	1,828	266	31	1	1
19 years	3,066	2,366	596	88	8	2
20 years	3,609	2,334	1,011	208	40	5
21 years	4,077	2,345	1,187	424	97	14
22 years	4,253	2,188	1,270	598	136	35
23 years	4,715	2,100	1,402	791	313	76
24 years	4,822	1,980	1,392	869	398	129
25 years	4,514	1,633	1,308	832	435	197
26 years	4,478	1,401	1,277	880	504	277
27 years	4,273	1,198	1,209	814	538	281
28 years	4,177	1,018	1,093	867	542	327
29 years	3,587	781	874	721	508	319
30 years	3,403	661	829	670	458	342
31 years	2,891	511	648	589	405	311
32 years	2,750	422	548	541	449	288
33 years	2,458	312	491	455	349	300
34 years	2,160	259	367	375	339	220
35 years	2,009	216	289	343	308	229
36 years	1,845	154	227	318	268	231
37 years	1,500	119	187	217	225	188
38 years	1,397	99	146	198	201	172
39 years	1,067	71	88	124	151	129
40 years	827	35	73	91	106	76
41 years	579	24	54	60	67	81
42 years	473	35	34	51	41	47
43 years	284	14	18	25	30	24
44 years	180	2	8	14	17	20
45 years	112	3	4	9	11	9
46 years	52	......	1	1	8	4
47 years	27	1	1	......	2	......
48 years	15	1	2	1	......	2
49 years	6	......	......	......	1	1
50 years and over	9	1	......	......	1	......
Age not stated	78	14	10	20	7	10

***of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth:* 1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
WHITE MOTHERS									
1,951	**1,252**	**828**	**518**	**288**	**191**	**120**	**62**	**53**	**195**
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	7
......	1	......	......	......	......	......	......	......	5
1	......	......	......	......	......	......	......	......	9
1	......	......	......	......	......	......	......	......	6
2	3	......	......	......	......	......	......	......	14
3	......	......	......	......	......	......	......	......	12
8	3	1	......	......	......	......	......	......	8
24	5	......	......	......	......	......	......	......	14
38	8	......	......	......	......	......	......	......	11
51	13	2	1	......	......	......	......	......	12
87	24	9	4	1	......	......	......	......	19
83	50	13	5	4	2	......	......	......	9
114	69	32	4	2	......	3	......	......	10
118	62	33	11	3	2	1	2	......	9
143	76	41	25	3	2	2	......	1	9
162	85	54	19	13	10	4	2	......	6
181	112	62	29	14	10	10	2	2	2
160	115	63	45	21	6	4	1	1	4
150	136	71	54	22	14	8	2	1	3
137	99	71	46	21	17	8	4	5	4
119	94	89	61	31	30	8	6	6	7
113	74	75	59	29	15	9	6	3	2
85	66	70	47	38	14	11	7	7	1
60	57	37	27	16	17	15	3	4	3
45	32	41	36	19	17	12	12	6	1
21	31	30	11	19	11	9	5	7	2
14	17	13	20	11	10	9	6	2	......
18	12	10	4	4	8	4	3	5	......
5	3	6	6	9	2	1	......	1	1
4	1	2	2	5	1	2	1	1	......
1	1	......	......	2	2	......	......	......	......
......	2	......	......	......	1	......	......	......	......
1	......	1	1	......	......	......	......	1	......
2	1	2	1	1	......	......	......	......	3

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births* (e
mother, according to the number

AGE OF MOTHER	All births	NUMBER				
		First child	Second child	Third child	Fourth child	Fifth child
						TOTAL CHILDREN
Total	31,614	5,495	4,665	4,601	4,175	3,489
15 years or under	12	12	......	......	......	......
16 years	66	60	5	1	......	......
17 years	175	149	23	2	1	......
18 years	361	287	70	3	......	......
19 years	599	417	137	33	8	2
20 years	761	442	203	93	22	1
21 years	898	460	261	114	47	11
22 years	1,167	507	334	189	101	25
23 years	1,326	502	326	304	138	43
24 years	1,617	462	400	351	253	98
25 years	1,740	378	365	460	312	156
26 years	1,859	363	388	433	343	201
27 years	1,800	273	335	357	356	294
28 years	2,035	264	335	418	402	312
29 years	1,769	191	265	303	332	297
30 years	2,071	164	274	320	377	356
31 years	1,365	105	150	188	229	228
32 years	1,591	101	168	215	224	245
33 years	1,512	76	152	175	193	229
34 years	1,336	62	104	134	191	189
35 years	1,384	62	86	128	157	181
36 years	1,273	36	80	110	119	151
37 years	1,061	37	43	72	103	131
38 years	1,118	28	51	70	105	115
39 years	727	15	40	41	48	62
40 years	705	21	30	29	57	58
41 years	323	5	12	16	18	28
42 years	364	3	9	17	9	27
43 years	220	3	4	8	11	21
44 years	154	4	5	4	5	10
45 years	86	1	1	4	5	7
46 years	51	......	......	2	1	3
47 years	27	......	2	1	4	2
48 years	11	......	......	......	......	......
49 years	3	......	......	......	......	......
50 years and over	6	1	......	......	......	1
Age not stated	41	4	7	6	4	5

of stillbirths), by age, and color of mother, and for white children by country of birth o in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
FOREIGN-BORN WHITE MOTHERS									
2,972	**1,574**	**1,043**	**717**	**441**	**249**	**130**	**78**	**72**	**69**
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	2
......	......	......	......	......	......	......	......	......	......
2	......	......	......	......	......	......	......	......	1
2	......	......	......	......	......	......	......	......	1
3	2	......	......	......	......	......	......	......	1
10	2	1	......	......	......	......	......	......	4
15	1	1	......	1	......	......	......	......	4
23	9	1	2	1	......	......	......	......	4
45	19	5	2	1	......	......	......	......	4
67	24	9	4	1	......	......	......	......	4
116	44	8	6	5	......	......	......	......	7
161	79	33	9	3	1	1	......	......	5
116	83	28	11	5	......	3	......	......	4
177	116	53	22	13	5	......	1	1	3
193	133	76	36	18	6	......	......	2	1
198	135	71	42	22	4	2	......	1	2
191	161	93	61	35	11	7	5	1	......
188	169	113	79	28	19	5	3	1	2
144	131	106	68	48	19	6	5	4	6
140	148	112	83	64	32	16	10	4	1
86	92	86	66	45	22	18	15	7	4
85	87	91	68	47	34	14	8	8	2
26	38	40	45	19	24	14	7	5	2
35	37	45	51	38	18	11	7	8	1
21	22	31	21	24	14	9	7	10	......
9	19	20	21	6	18	12	4	8	1
6	9	8	10	5	14	4	3	7	......
6	4	8	5	8	1	5	2	2	......
1	6	1	1	1	4	......	1	2	......
3	......	1	2	......	1	3	......	1	......
......	......	......	2	1	......	......	......	......	......
......	......	1	......	1	1	......	......	......	......
3	4	1	......	1	1	......	......	......	2

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive mother, according to the number of child*

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
			COUNTRY OF BIRTH OF MOTHER — ENGLAND,				
Total	1,539	472	347	239	180	104	75
15 years or under	......	......	......	......	......	......	....
16 years	3	2	1	......	......	......	....
17 years	10	10	......	......	......	......	....
18 years	10	9	1	......	......	......	....
19 years	26	20	6	......	......	......	....
20 years	38	28	9	1	......	......	....
21 years	51	34	14	3	......	......	....
22 years	60	32	20	5	3	......	....
23 years	70	36	23	10	......	1	....
24 years	69	30	30	8	1	......	....
25 years	89	45	20	19	4	1	....
26 years	69	29	20	12	4	2	1
27 years	80	29	22	14	10	4	1
28 years	93	25	30	17	16	3	2
29 years	71	19	18	17	10	4	2
30 years	71	21	21	9	9	7	2
31 years	68	15	13	15	13	5	6
32 years	68	11	14	13	10	12	6
33 years	78	15	11	16	16	6	7
34 years	84	16	17	14	19	3	6
35 years	89	12	17	21	13	10	7
36 years	55	6	8	9	9	10	3
37 years	69	8	5	10	12	12	10
38 years	68	5	6	11	18	9	8
39 years	41	8	7	6	2	3	5
40 years	49	5	6	4	5	2	4
41 years	21	......	2	2	4	3	2
42 years	18	......	2	3	......	2	3
43 years	7	......	1	......	2	1	....
44 years	8	1	2	......	......	2	....
45 years	3	......	1	......	......	1	....
46 years	1	......	......	......	......	1	....
47 years	......	......	......	......	......	......	....
48 years	......	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	1	1	......	......	......	......	....
Age not stated	1	......	......	......	......	......	....

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number child of not stated
SCOTLAND AND WALES									
43	27	17	18	7	4	2	......	1	3
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	1
1	......	......	......	......	......	......	......	......	......
1	1	......	......	......	......	......	......	......	......
4	2	......	1	......	......	......	......	......	......
5	2	......	1	1	......	......	......	......	......
6	3	......	......	......	......	......	......	......	......
5	2	1	1	1	......	......	......	......	......
4	2	......	3	2	......	......	......	......	1
1	2	3	2	......	1	2	......	......	......
3	2	3	1	......	1	......	......	......	......
7	6	5	3	1	......	......	......	1	......
1	1	1	3	1	1	......	......	......	......
1	1	2	2	1	1	......	......	......	......
2	1	......	......	......	......	......	......	......	......
......	2	1	......	......	......	......	......	......	......
......	......	......	1	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	1	......	......	......	......	......	......	......

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive*
mother, according to the number of child

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
		COUNTRY OF BIRTH OF					
Total	**1,488**	**316**	**298**	**264**	**204**	**139**	**103**
15 years or under	......	......	......	......	......	......	......
16 years	2	2	......	......	......	......	......
17 years	4	4	......	......	......	......	......
18 years	1	1	......	......	......	......	......
19 years	3	3	......	......	......	......	......
20 years	6	6	......	......	......	......	......
21 years	9	4	2	2	1	......	......
22 years	26	14	7	4	1	......	......
23 years	47	28	12	5	1	1	......
24 years	53	26	13	8	4	1	1
25 years	44	18	13	8	3	2	......
26 years	89	29	31	16	9	4	......
27 years	77	23	19	21	9	4	......
28 years	93	30	19	24	10	6	3
29 years	86	19	25	18	15	4	3
30 years	110	25	31	16	22	6	7
31 years	110	22	24	20	19	14	6
32 years	88	11	22	15	17	8	10
33 years	96	10	20	22	17	10	7
34 years	74	11	13	12	14	9	8
35 years	93	15	12	18	12	12	11
36 years	65	3	8	10	15	9	8
37 years	58	6	6	11	10	11	7
38 years	88	2	9	14	8	18	11
39 years	52	......	6	6	6	8	8
40 years	37	2	1	6	6	3	4
41 years	17	1	2	2	2	1	3
42 years	29	......	1	4	1	2	4
43 years	17	1	......	2	1	5	......
44 years	7	......	......	......	......	......	1
45 years	2	......	......	......	......	1	......
46 years	1	......	......	......	......	......	......
47 years	1	......	......	......	1	......	......
48 years	......	......	......	......	......	......	......
49 years	......	......	......	......	......	......	......
50 years and over	1	......	......	......	......	......	1
Age not stated	2	......	2	......	......	......	......

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
MOTHER — IRELAND									
59	55	24	15	3	2	......	......	......	6
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	1
....	......	......	......	......	......	......	......	......	1
1	1	......	......	......	......	......	......	......	....
2	......	......	......	......	......	......	......	......	1
2	2	......	......	......	......	......	......	......	1
2	3	......	......	......	......	......	......	......	....
1	4	3	1	1	......	......	......	......	....
2	3	1	1	......	......	......	......	......	....
6	4	2	1	......	......	......	......	......	....
6	3	1	2	......	......	......	......	......	....
3	2	1	......	......	1	......	......	......	....
11	8	5	1	......	......	......	......	......	1
5	8	2	3	......	......	......	......	......	....
7	4	1	2	......	......	......	......	......	1
3	2	1	......	......	......	......	......	......	....
3	7	4	1	2	......	......	......	......	....
2	2	2	1	......	1	......	......	......	....
2	1	1	2	......	......	......	......	......	....
....	1	......	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive*
mother, according to the number of child

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
							COUNTRY OF BIRTH
Total	**1,115**	**178**	**195**	**167**	**136**	**101**	**79**
15 years or under	1	1	......	......	......	......	......
16 years	......	......	......	......	......	......	......
17 years	3	3	......	......	......	......	......
18 years	6	6	......	......	......	......	......
19 years	12	11	1	......	......	......	......
20 years	17	11	6	......	......	......	......
21 years	25	17	7	1	......	......	......
22 years	18	9	5	2	2	......	......
23 years	36	14	12	7	2	1	......
24 years	29	10	9	7	2	......	......
25 years	32	9	10	5	6	1	1
26 years	43	9	8	16	5	3	1
27 years	35	8	10	10	4	3	......
28 years	43	9	12	8	10	2	2
29 years	62	14	14	18	6	8	1
30 years	67	9	12	14	13	6	5
31 years	46	5	15	6	5	7	4
32 years	76	7	15	13	10	6	9
33 years	54	5	11	8	11	8	1
34 years	60	6	10	13	8	8	8
35 years	64	4	9	5	9	8	9
36 years	58	3	5	13	5	7	5
37 years	50	1	6	7	6	10	5
38 years	58	2	5	1	8	5	5
39 years	53	1	8	1	6	4	4
40 years	49	2	4	2	8	1	5
41 years	22	......	1	2	3	2	2
42 years	36	1	......	3	2	3	4
43 years	20	1	......	1	1	5	3
44 years	14	......	......	2	2	1	1
45 years	13	......	......	......	1	2	1
46 years	7	......	......	1	......	......	1
47 years	2	......	......	......	......	......	1
48 years	......	......	......	......	......	......	......
49 years	1	......	......	......	......	......	......
50 years and over	......	......	......	......	......	......	......
Age not stated	3	......	......	1	1	......	1

***of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth:* 1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
OF MOTHER — GERMANY									
82	**53**	**43**	**30**	**24**	**9**	**8**	**5**	**3**	**2**
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
4	4	......	......	......	......	......	......	......	......
2	2	......	......	......	......	......	......	......	......
6	4	1	4	......	......	......	......	......	1
6	1	2	1	......	......	......	......	......	......
4	1	2	......	......	......	......	......	......	......
12	1	4	1	1	1	......	......	......	......
8	4	2	4	1	......	......	......	......	1
5	3	3	3	......	......	1	......	......	......
8	10	3	4	3	2	1	1	......	......
4	8	8	3	3	......	2	......	1	......
7	6	5	3	2	2	1	1	......	......
3	4	2	1	1	......	......	......	1	......
6	1	5	1	6	1	......	2	1	......
1	......	3	1	3	......	1	......	......	......
2	2	2	1	......	......	......	1	......	......
1	1	1	1	2	2	1	......	......	......
......	1	......	1	2	......	1	......	......	......
......	......	......	......	......	1	1	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	1	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births*
mother, according to the numb

AGE OF MOTHER	All births	First child	Second child	Third child	Fourth child
		COUNTRY			
Total	12,082	2,181	1,441	1,453	1,429
15 years or under	8	8	......	......	......
16 years	43	38	4	1	......
17 years	105	88	17	......	......
18 years	232	178	50	3	......
19 years	329	209	85	28	5
20 years	408	225	97	70	15
21 years	453	207	134	68	33
22 years	575	241	147	101	65
23 years	553	213	102	135	74
24 years	614	156	116	125	128
25 years	608	125	95	143	122
26 years	623	120	100	104	114
27 years	618	88	77	97	119
28 years	664	81	86	109	125
29 years	619	61	69	81	92
30 years	686	31	69	82	111
31 years	486	16	24	56	75
32 years	532	19	41	57	59
33 years	575	21	41	45	59
34 years	475	8	19	34	57
35 years	475	9	10	28	38
36 years	489	8	19	28	32
37 years	422	10	7	13	29
38 years	427	9	11	15	32
39 years	278	5	6	12	12
40 years	284	4	4	6	17
41 years	132	......	3	4	6
42 years	134	1	4	3	3
43 years	98	......	1	1	1
44 years	56	1	1	1	3
45 years	35	1	......	1	......
46 years	14	......	......	......	......
47 years	14	......	1	1	2
48 years	5	......	......	......	......
49 years	1	......	......	......	......
50 years and over	2	......	......	......	......
Age not stated	10	......	1	1	1

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: 1921 — (Continued)

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
MOTHER — ITALY									
956	**750**	**463**	**345**	**235**	**124**	**64**	**45**	**43**	**28**
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	1
1	......	......	......	......	......	......	......	......	1
1	1	......	......	......	......	......	......	......	1
7	......	1	......	......	......	......	......	......	2
11	1	1	......	......	......	......	......	......	8
16	6	1	2	1	......	......	......	......	2
27	10	2	2	......	......	......	......	......	1
35	16	5	2	1	......	......	......	......	1
61	26	6	5	5	......	......	......	......	8
84	39	19	8	1	1	......	......	......	1
67	42	9	6	2	......	2	......	......	......
79	58	27	11	7	4	......	1	1	1
96	62	32	16	13	2	......	......	2	......
87	69	27	15	13	1	1	......	1	1
67	87	42	31	19	5	4	4	1	......
84	82	45	36	15	10	5	3	1	1
57	66	57	33	28	10	4	4	4	3
62	63	45	39	35	15	6	4	3	......
37	37	36	26	26	12	8	8	2	1
35	36	43	39	28	17	5	5	5	1
8	12	21	20	8	13	8	4	4	2
13	13	18	24	14	9	6	2	3	......
8	10	15	13	12	8	6	6	3	......
2	4	6	8	2	8	4	2	6	......
4	4	3	5	1	7	2	1	3	......
3	......	1	2	1	......	2	......	2	......
......	2	......	1	1	1	......	1	2	......
2	......	1	1	......	......	1	......	......	......
......	......	......	......	1	......	......	......	......	......
......	......	......	......	......	1	......	......	......	......
1	4	......	......	1	......	......	......	......	......

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Birth*
mother, according to the numbe

AGE OF MOTHER	All births	NUMBE			
		First child	Second child	Third child	Fourth child
		COUNTRY O			
Total	**2,248**	**389**	**400**	**427**	**331**
15 years or under	1	1	......	......	......
16 years	......	......	......	......	......
17 years	7	5	2	......	......
18 years	6	6	......	......	......
19 years	19	15	4	......	......
20 years	29	23	5	1	......
21 years	55	31	14	8	1
22 years	71	38	20	7	5
23 years	92	43	24	18	5
24 years	153	69	33	28	18
25 years	147	36	46	38	14
26 years	154	30	46	47	22
27 years	148	22	46	36	25
28 years	180	18	40	53	32
29 years	154	19	27	34	33
30 years	167	9	33	43	30
31 years	95	7	14	19	23
32 years	115	6	12	23	25
33 years	102	2	5	23	14
34 years	83	2	8	14	21
35 years	104	1	7	9	24
36 years	88	1	8	10	17
37 years	54	2	1	5	7
38 years	80	......	2	6	10
39 years	38	......	......	1	2
40 years	42	1	2	2	2
41 years	13	......	......	......	......
42 years	20	......	......	......	......
43 years	8	......	......	1	1
44 years	5	1	......	......	......
45 years	3	......	......	......	......
46 years	5	......	......	......	......
47 years	3	......	1	......	......
48 years	2	......	......	......	......
49 years	1	......	......	......	......
50 years and over	1	......	......	......	......
Age not stated	3	1	......	1	......

of stillbirths), by age, and color of mother, and for white children by country of birth of
in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
MOTHER — RUSSIA									
113	**70**	**44**	**33**	**22**	**9**	**4**	**1**	......	**2**
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	1	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
6	1	......	......	......	......	......	......	......	......
4	1	......	......	......	......	......	......	......	1
11	3	1	......	......	......	......	......	......	......
5	3	1	1	1	......	......	......	......	......
7	2	1	1	......	......	......	......	......	......
9	4	7	1	1	......	......	......	......	......
8	1	2	2	1	1	......	......	......	......
17	5	2	4	2	......	......	......	......	......
7	7	6	5	1	1	......	......	......	......
12	4	......	3	2	......	......	......	......	1
9	9	10	6	2	1	......	......	......	......
7	7	4	3	2	1	1	......	......	......
4	9	4	......	2	1	1	......	......	......
2	3	2	......	......	1	......	1	......	......
2	4	1	4	2	......	1	......	......	......
1	2	......	1	2	......	......	......	......	......
......	......	2	1	......	1	......	......	......	......
......	2	1	......	......	......	......	......	......	......
1	2	......	......	2	......	......	......	......	......
......	1	......	......	......	1	......	......	......	......
......	......	......	......	......	1	1	......	......	......
......	......	......	1	......	......	......	......	......	......
......	......	......	......	1	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive* *mother, according to the number of child*

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
							COUNTRY OF BIRTH
Total	**2,262**	**256**	**327**	**358**	**335**	**310**	**224**
15 years or under	1	1	......	......	......	......	....
16 years	2	2	......	......	......	......	....
17 years	3	3	......	......	......	......	....
18 years	20	15	5	......	......	......	....
19 years	20	15	4	1	......	......	....
20 years	35	22	11	1	1	......	....
21 years	52	28	11	10	2	1	....
22 years	76	26	29	12	7	......	1
23 years	100	25	25	33	11	6	....
24 years	137	26	45	37	20	9	....
25 years	165	24	40	50	33	11	7
26 years	149	18	23	45	37	17	6
27 years	148	10	34	28	31	24	8
28 years	172	12	23	41	35	31	21
29 years	132	6	15	18	28	28	19
30 years	155	4	17	30	23	34	25
31 years	99	4	5	12	14	24	16
32 years	121	4	10	10	18	23	25
33 years	106	1	8	6	14	20	22
34 years	105	1	6	3	19	16	15
35 years	108	4	7	6	12	24	17
36 years	74	1	2	4	9	13	18
37 years	58	......	2	3	5	8	5
38 years	68	1	3	2	3	6	9
39 years	46	......	1	2	4	7	4
40 years	40	1	......	......	4	1	2
41 years	16	......	......	1	1	1	2
42 years	14	1	......	......	......	4	1
43 years	11	......	......	1	......	......	....
44 years	13	......	......	......	......	1	1
45 years	5	......	......	1	1	......	....
46 years	3	......	......	1	......	1	....
47 years	2	......	......	......	1	......	....
48 years	......	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	......	......	......	......	......	......	....
Age not stated	6	1	1	......	2	......	....

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: 1921 — (Continued)

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
OF MOTHER — AUSTRIA									
145	105	98	41	29	15	8	3	3	5
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	2	......	......	......	......	......	......	......	......
8	3	1	......	1	......	......	......	......	......
4	1	2	1	......	......	......	......	......	1
12	5	1	......	......	......	......	......	......	......
8	6	6	......	1	......	......	......	......	1
7	6	8	1	......	......	......	......	......	2
15	8	4	3	1	......	......	......	......	......
18	10	5	1	1	......	......	......	......	......
21	9	9	5	1	......	......	......	......	......
16	8	7	5	2	......	......	......	......	......
9	9	7	......	......	2	......	......	......	......
6	8	10	4	6	1	......	......	......	......
5	11	9	6	6	4	1	2	......	......
3	5	10	4	2	......	3	1	......	......
4	4	10	2	6	4	2	......	......	......
2	2	2	2	......	2	1	......	......	......
2	1	2	2	......	......	1	......	......	......
2	2	3	......	1	......	......	......	2	......
1	4	1	4	1	......	......	......	......	......
......	......	......	1	......	1	......	......	1	......
......	......	1	......	......	......	......	......	......	......
......	1	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	1	......	......	......	1

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive mother, according to the number of child*

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
		COUNTRY OF BIRTH					
Total	**646**	**68**	**90**	**107**	**94**	**72**	**54**
15 years or under	......	......	......	......	......	......	......
16 years	1	1	......	......	......	......	......
17 years	1	......	1	......	......	......	......
18 years	4	3	1	......	......	......	......
19 years	7	5	......	......	1	1	......
20 years	11	5	3	3	......	......	......
21 years	13	6	3	3	1	......	......
22 years	21	11	5	5	......	......	......
23 years	26	5	9	8	4	......	......
24 years	27	4	10	5	5	2	1
25 years	46	6	9	16	10	4	1
26 years	40	5	10	10	9	5	1
27 years	49	4	6	11	14	8	3
28 years	34	1	2	8	9	6	5
29 years	45	2	7	8	10	6	5
30 years	48	4	2	7	9	12	3
31 years	24	......	3	7	2	4	4
32 years	41	3	5	6	5	5	7
33 years	36	......	2	4	3	4	9
34 years	35	2	4	2	3	5	6
35 years	28	......	3	......	2	2	2
36 years	16	......	1	1	2	2	1
37 years	20	1	2	......	......	2	2
38 years	23	......	......	1	2	1	2
39 years	19	......	1	2	2	2	1
40 years	12	......	1	......	......	1	1
41 years	6	......	......	......	1	......	......
42 years	5	......	......	......	......	......	......
43 years	......	......	......	......	......	......	......
44 years	5	......	......	......	......	......	......
45 years	1	......	......	......	......	......	......
46 years	1	......	......	......	......	......	......
47 years	......	......	......	......	......	......	......
48 years	......	......	......	......	......	......	......
49 years	......	......	......	......	......	......	......
50 years and over	1	......	......	......	......	......	......
Age not stated	......	......	......	......	......	......	......

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
OF MOTHER — HUNGARY									
52	**44**	**21**	**23**	**8**	**7**	**3**	......	......	**3**
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
3	......	......	......	......	......	......	......	......	......
2	......	1	......	......	......	......	......	......	......
5	......	......	......	......	......	......	......	......	2
6	4	......	1	......	......	......	......	......	......
2	1	1	......	......	......	......	......	......	......
3	4	2	1	......	......	......	......	......	......
5	5	......	2	......	1	......	......	......	1
7	5	1	......	......	......	......	......	......	......
8	4	2	2	2	1	......	......	......	......
2	4	3	......	......	......	......	......	......	......
5	4	2	......	1	......	1	......	......	......
1	5	3	5	2	1	......	......	......	......
2	3	3	3	......	......	......	......	......	......
1	2	1	3	1	......	1	......	......	......
......	2	......	1	1	1	......	......	......	......
......	1	......	3	......	1	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	1	1	1	1	1	......	......	......
......	......	......	......	......	1	......	......	......	......
......	......	......	1	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	1	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive mother, according to the number of child*

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
							COUNTRY OF BIRTH
Total	**6,240**	**530**	**724**	**1,044**	**1,019**	**838**	**643**
15 years or under	......	......	......	......	......	......	......
16 years	7	7	......	......	......	......	......
17 years	21	20	......	1	......	......	......
18 years	33	27	6	......	......	......	......
19 years	61	44	15	1	......	......	......
20 years	86	42	29	11	4	......	......
21 years	87	44	25	10	6	2	......
22 years	148	51	47	31	11	4	4
23 years	228	47	70	67	32	9	2
24 years	328	58	90	103	53	14	6
25 years	400	45	78	146	93	32	4
26 years	454	40	93	139	114	48	14
27 years	421	25	57	101	116	92	21
28 years	513	26	62	114	134	95	63
29 years	406	13	41	77	108	85	47
30 years	528	16	43	78	116	118	96
31 years	271	5	14	27	45	54	61
32 years	341	5	22	47	51	69	61
33 years	283	2	16	24	31	49	48
34 years	258	3	6	14	23	40	39
35 years	276	2	6	22	24	34	53
36 years	276	2	5	11	16	27	31
37 years	208	3	1	6	18	22	28
38 years	177	2	1	7	10	17	23
39 years	116	......	3	2	4	7	12
40 years	100	1	1	......	4	7	16
41 years	50	......	......	1	......	4	2
42 years	72	......	......	1	3	5	7
43 years	31	......	......	1	2	1	2
44 years	25	......	1	......	......	......	......
45 years	11	......	......	......	1	......	......
46 years	8	......	......	......	......	......	1
47 years	2	......	......	......	......	......	......
48 years	4	......	......	......	......	......	......
49 years	......	......	......	......	......	......	......
50 years and over	......	......	......	......	......	......	......
Age not stated	10	......	2	2	......	3	2

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: 1921 — (Continued)

IN ORDER OF BIRTH

OF MOTHER — POLAND

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
458	359	253	161	77	55	28	18	12	11
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
1	1	......	......	......	......	......	......	......	2
2	......	......	......	......	......	......	......	......	......
4	1	......	......	......	......	......	......	......	1
4	4	......	......	......	......	......	......	......	1
14	3	1	1	......	......	......	......	......	......
24	9	1	......	......	......	......	......	......	1
35	19	6	......	......	......	1	......	......	......
27	23	9	2	2	......	1	......	......	1
41	25	16	1	2	......	......	......	......	1
41	36	21	11	1	3	......	......	......	......
50	38	23	15	5	1	......	......	......	1
50	38	25	12	5	2	2	1	......	......
55	53	37	25	9	5	......	......	......	......
37	31	28	19	8	5	......	1	......	1
27	29	22	13	11	7	5	3	......	......
17	14	12	20	9	6	4	4	1	1
16	11	15	13	5	5	8	1	2	......
7	7	8	9	6	6	4	2	......	......
5	7	13	10	7	5	3	8	3	......
......	4	7	4	2	3	1	1	8	......
2	5	6	3	1	4	2	......	1	......
1	......	1	2	2	2	......	1	1	......
......	......	2	......	2	1	1	1	......	......
1	1	......	......	......	......	......	......	......	......
1	......	......	1	......	......	1	......	1	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive mother, according to the number of child*

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
COUNTRY OF BIRTH							
Total	**2,097**	**607**	**435**	**272**	**222**	**174**	**118**
15 years or under	1	1	......	......	......	......	....
16 years	5	5	......	......	......	......	....
17 years	15	13	2	......	......	......	....
18 years	28	24	4	......	......	......	....
19 years	78	61	13	3	1	......	....
20 years	75	46	25	3	1	......	....
21 years	87	46	31	8	1	1	....
22 years	100	51	26	15	5	3	....
23 years	83	45	25	7	3	......	1
24 years	109	40	30	19	13	4	3
25 years	90	35	22	13	9	10	1
26 years	124	44	26	24	15	6	9
27 years	99	31	26	17	13	9	3
28 years	125	35	34	20	17	10	6
29 years	87	18	22	11	14	12	6
30 years	125	26	23	24	19	14	9
31 years	82	19	20	15	11	6	6
32 years	116	20	13	15	16	14	11
33 years	100	9	21	11	17	14	8
34 years	85	4	16	11	16	14	6
35 years	76	11	8	8	11	12	6
36 years	76	7	14	11	8	11	12
37 years	63	3	8	10	7	9	7
38 years	77	3	11	7	8	7	10
39 years	48	1	3	8	6	4	4
40 years	53	4	6	6	8	8	3
41 years	30	1	2	3	......	4	1
42 years	13	......	2	1	......	......	5
43 years	8	1	1	......	1	......	....
44 years	15	1	1	1	......	1	1
45 years	9	......	......	......	2	1	....
46 years	7	......	......	......	......	......	....
47 years	3	......	......	......	......	......	....
48 years	......	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	......	......	......	......	......	......	....
Age not stated	5	2	......	1	......	......	....

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

OF MOTHER — HUNGARY

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
52	**44**	**21**	**23**	**8**	**7**	**3**	......	......	**3**
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
3	......	......	......	......	......	......	......	......	....
2	......	1	......	......	......	......	......	......	....
5	......	......	......	......	......	......	......	......	2
6	4	......	1	......	......	......	......	......	....
2	1	1	......	......	......	......	......	......	....
3	4	2	1	......	......	......	......	......	....
5	5	......	2	......	1	......	......	......	1
7	5	1	......	......	......	......	......	......	....
8	4	2	2	2	1	......	......	......	....
2	4	3	......	......	......	......	......	......	....
5	4	2	......	1	......	1	......	......	....
1	5	3	5	2	1	......	......	......	....
2	3	3	3	......	......	......	......	......	....
1	2	1	3	1	......	1	......	......	....
....	2	......	1	1	1	......	......	......	....
....	1	......	3	......	1	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	1	1	1	1	1	......	......	....
....	......	......	......	......	1	......	......	......	....
....	......	......	1	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	1	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive*
mother, according to the number of child

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
							COUNTRY OF BIRTH
Total	**6,240**	**530**	**734**	**1,044**	**1,019**	**838**	**643**
15 years or under	......	......	......	......	......	......	....
16 years	7	7	......	......	......	......	....
17 years	21	20	......	1	......	......	....
18 years	33	27	6	......	......	......	....
19 years	61	44	15	1	......	......	....
20 years	86	42	29	11	4	......	....
21 years	87	44	25	10	6	2	....
22 years	148	51	47	31	11	4	4
23 years	228	47	70	67	32	9	2
24 years	328	58	90	103	53	14	6
25 years	400	45	78	146	93	32	4
26 years	454	40	93	139	114	48	14
27 years	421	25	57	101	116	92	21
28 years	513	26	62	114	134	95	63
29 years	406	13	41	77	108	85	47
30 years	528	16	43	78	116	118	96
31 years	271	5	14	27	45	54	61
32 years	341	5	22	47	51	69	61
33 years	283	2	16	24	31	49	48
34 years	258	3	6	14	23	40	39
35 years	276	2	6	22	24	34	53
36 years	276	2	5	11	16	27	31
37 years	208	3	1	6	18	22	28
38 years	177	2	1	7	10	17	23
39 years	116	......	3	2	4	7	12
40 years	100	1	1	......	4	7	16
41 years	50	......	......	1	......	4	2
42 years	72	......	......	1	3	5	7
43 years	31	......	......	1	2	1	2
44 years	25	......	1	......	......	......	....
45 years	11	......	......	......	1	......	....
46 years	8	......	......	......	......	......	1
47 years	2	......	......	......	......	......	....
48 years	4	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	......	......	......	......	......	......	....
Age not stated	10	......	2	2	......	3	2

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: 1921 — (Continued)

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
OF MOTHER — POLAND									
458	359	253	161	77	55	28	18	12	11
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	1
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	....
1	1	......	......	......	......	......	......	......	2
2	......	......	......	......	......	......	......	......	....
4	1	......	......	......	......	......	......	......	1
4	4	......	......	......	......	......	......	......	1
14	3	1	1	......	......	......	......	......	....
24	9	1	......	......	......	......	......	......	1
35	19	6	......	......	......	1	......	......	....
27	23	9	2	2	......	1	......	......	1
41	25	16	1	2	......	......	......	......	1
41	36	21	11	1	3	......	......	......	....
50	38	23	15	5	1	......	......	......	1
50	38	25	12	5	2	2	1	......	....
55	53	37	25	9	5	......	......	......	....
37	31	28	19	8	5	......	1	......	1
27	29	22	13	11	7	5	3	......	....
17	14	12	20	9	6	4	4	1	1
16	11	15	13	5	5	3	1	2	....
1	7	8	9	6	6	4	2	......	....
5	7	13	10	7	5	3	3	3	....
....	4	7	4	2	3	1	1	3	....
2	5	6	3	1	4	2	......	1	....
1	......	1	2	2	2	......	1	1	....
....	......	2	......	2	1	1	1	......	....
1	1	......	......	......	......	......	......	......	....
1	......	......	1	......	......	1	......	1	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	....

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive mother, according to the number of child*

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
		COUNTRY OF BIRTH					
Total	2,097	607	435	272	222	174	118
15 years or under	1	1	......	......	......	......	....
16 years	5	5	......	......	......	......	....
17 years	15	13	2	......	......	......	....
18 years	28	24	4	......	......	......	....
19 years	78	61	13	3	1	......	....
20 years	75	46	25	3	1	......	....
21 years	87	46	31	8	1	1	....
22 years	100	51	26	15	5	3	....
23 years	83	45	25	7	3	......	1
24 years	109	40	30	19	13	4	3
25 years	90	35	22	13	9	10	1
26 years	124	44	26	24	15	6	9
27 years	99	31	26	17	13	9	3
28 years	125	35	34	20	17	10	6
29 years	87	18	22	11	14	12	6
30 years	125	26	23	24	19	14	9
31 years	82	19	20	15	11	6	6
32 years	116	20	13	15	16	14	11
33 years	100	9	21	11	17	14	8
34 years	85	4	16	11	16	14	6
35 years	76	11	8	8	11	12	6
36 years	76	7	14	11	8	11	12
37 years	63	3	8	10	7	9	7
38 years	77	3	11	7	8	7	10
39 years	48	1	3	8	6	4	4
40 years	53	4	6	6	8	8	3
41 years	30	1	2	3	......	4	1
42 years	13	......	2	1	......	......	5
43 years	8	1	1	......	1	......	....
44 years	15	1	1	1	......	1	1
45 years	9	......	......	......	2	1	....
46 years	7	......	......	......	......	......	....
47 years	3	......	......	......	......	......	....
48 years	......	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	......	......	......	......	......	......	....
Age not stated	5	2	......	1	......	......	....

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

OF MOTHER — CANADA

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
80	62	45	27	18	13	8	6	6	4
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	1	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
2	1	......	......	......	......	......	......	......	....
2	1	......	1	......	......	......	......	......	....
7	2	......	......	......	......	......	......	......	1
2	2	......	1	......	......	......	......	......	....
17	6	1	......	2	1	......	......	......	....
8	3	6	2	1	......	......	......	......	....
8	5	3	1	......	......	1	......	......	....
3	7	5	3	1	......	1	......	......	....
2	2	6	1	1	1	......	......	......	....
8	6	3	......	1	1	......	......	......	....
7	7	6	5	5	......	......	......	1	....
4	6	3	1	2	1	......	2	2	1
2	5	5	2	......	3	......	1	......	....
4	4	2	7	2	......	......	......	......	....
1	......	......	2	1	......	......	......	1	....
....	1	......	1	1	1	......	......	1	....
....	......	......	......	......	3	5	1	......	1
....	1	1	......	......	1	1	1	1	....
1	1	3	......	1	......	......	1	......	....
....	1	1	......	......	1	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	1

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive*
mother, according to the number of child

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
							COUNTRY OF BIRTH OF
Total	**463**	**134**	**103**	**77**	**47**	**36**	**27**
15 years or under	......	......	......	......	......	......	....
16 years	1	1	......	......	......	......	....
17 years	......	......	......	......	......	......	....
18 years	4	4	......	......	......	......	....
19 years	6	5	......	......	1	......	....
20 years	9	9	......	......	......	......	....
21 years	13	7	5	......	1	......	....
22 years	9	6	2	1	......	......	....
23 years	11	8	2	1	......	......	....
24 years	19	12	4	......	2	1	....
25 years	15	6	5	3	1	......	....
26 years	22	11	8	1	2	......	....
27 years	29	8	13	6	2	......	....
28 years	30	9	10	6	2	2	....
29 years	26	7	8	5	3	2	1
30 years	19	5	6	4	4	......	....
31 years	33	8	11	4	4	3	3
32 years	27	6	3	7	4	5	....
33 years	23	7	4	5	3	2	1
34 years	31	5	3	11	1	4	4
35 years	9	2	1	2	3	......	....
36 years	31	2	6	8	2	5	4
37 years	25	2	2	5	4	3	3
38 years	13	2	1	2	3	1	....
39 years	13	......	4	1	2	2	1
40 years	13	1	2	1	1	2	4
41 years	6	1	2	......	1	1	....
42 years	8	......	......	2	......	......	4
43 years	9	......	1	......	1	2	2
44 years	5	......	......	......	......	1	....
45 years	2	......	......	2	......	......	....
46 years	2	......	......	......	......	......	....
47 years	......	......	......	......	......	......	....
48 years	......	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	......	......	......	......	......	......	....
Age not stated	......	......	......	......	......	......	....

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: 1921 — (Continued)

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
MOTHER — NORWAY, SWEDEN AND DENMARK									
17	8	4	3	3	1	1	......	1	1
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	1
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
2	......	......	......	......	......	......	......	......	......
......	1	......	......	......	......	......	......	......	......
2	1	......	......	......	......	......	......	......	......
......	1	......	......	......	......	......	......	......	......
3	1	......	......	......	......	......	......	......	......
4	1	1	......	......	......	......	......	......	......
2	......	2	......	......	......	......	......	......	......
1	1	......	1	......	......	......	......	......	......
......	1	......	......	1	......	......	......	......	......
......	1	......	......	......	......	......	......	......	......
......	......	......	1	1	......	......	......	......	......
3	......	......	......	......	......	......	......	......	......
......	......	......	1	1	1	......	......	1	......
......	......	......	......	......	......	......	......	......	......
......	......	1	......	......		1	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive*
mother, according to the number of child

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
							COUNTRY OF BIRTH OF
Total	1,434	364	295	193	178	126	82
15 years or under	......	......	......	......	......	......	....
16 years	2	2	......	......	......	......	....
17 years	6	3	1	1	1	......	....
18 years	17	14	3	......	......	......	....
19 years	38	29	9	......	......	......	....
20 years	47	25	18	3	1	......	....
21 years	53	36	15	1	1	......	....
22 years	63	28	26	6	2	......	1
23 years	80	38	22	13	6	1	....
24 years	79	31	20	11	7	6	2
25 years	104	29	27	19	17	8	1
26 years	92	28	23	19	12	3	6
27 years	96	25	25	16	13	6	3
28 years	88	18	17	18	12	12	5
29 years	81	13	19	16	13	8	6
30 years	95	14	17	13	21	18	5
31 years	51	4	7	7	18	7	5
32 years	66	9	11	9	9	8	8
33 years	59	4	13	11	8	7	6
34 years	46	4	2	6	10	5	7
35 years	62	2	6	9	9	8	8
36 years	45	3	4	5	4	8	2
37 years	34	1	3	2	5	5	6
38 years	39	2	2	4	3	6	3
39 years	23	......	1	......	2	4	2
40 years	26	......	3	2	2	4	3
41 years	10	2	......	1	......	1	....
42 years	15	......	......	......	......	1	3
43 years	11	......	......	1	1	......	....
44 years	1	......	......	......	......	......	....
45 years	2	......	......	......	......	......	....
46 years	2	......	......	......	1	......	....
47 years	......	......	......	......	......	......	....
48 years	......	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	......	......	......	......	......	......	....
Age not stated	1	......	1	......	......	......	....

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth cdilh	Fourteenth child	Fifteenth child or over	Number of child not stated
MOTHER — OTHER FOREIGN COUNTRIES									
67	41	31	21	15	10	4	......	3	4
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	1	......	......	......	......	......	......	......	......
2	......	......	......	......	......	......	......	......	1
1	......	......	......	......	......	......	......	......	......
3	2	2	......	......	......	......	......	......	1
4	2	......	......	......	......	......	......	......	......
5	1	......	......	......	......	......	......	......	......
3	2	1	......	1	......	......	......	......	......
1	2	......	......	......	......	......	......	......	......
4	5	1	1	1	......	......	......	......	......
5	5	......	......	......	......	......	......	......	......
4	1	3	2	1	1	......	......	......	......
6	3	4	2	3	2	......	......	......	......
7	2	5	5	......	......	......	......	......	......
3	4	1	3	......	1	......	......	......	......
7	4	4	2	......	1	1	......	......	......
3	1	5	1	1	1	......	......	1	1
2	3	2	1	1	2	1	......	......	......
2	......	1	2	......	......	1	......	......	......
2	2	......	1	4	1	......	......	......	1
2	......	1	......	3	1	1	......	1	......
......	1	......	......	......	......	......	......	......	......
......	......	1	......	......	......	......	......	1	......
......	......	......	1	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive*
mother, according to the number of child

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
		COUNTRY OF BIRTH OF					
Total	**22**	**9**	**3**	**3**	......	......	**1**
15 years or under	1	1	......	......	......	......	....
16 years	1	1	......	......	......	......	....
17 years	......	......	......	......	......	......	....
18 years	......	......	......	......	......	......	....
19 years	2	2	......	......	......	......	....
20 years	2	1	1	......	......	......	....
21 years	......	......	......	......	......	......	....
22 years	1	......	1	......	......	......	....
23 years	2	2	......	......	......	......	....
24 years	......	......	......	......	......	......	....
25 years	......	......	......	......	......	......	....
26 years	......	......	......	......	......	......	....
27 years	4	1	......	1	......	......	1
28 years	1	......	......	1	......	......	....
29 years	......	......	......	......	......	......	....
30 years	......	......	......	......	......	......	....
31 years	......	......	......	......	......	......	....
32 years	1	......	1	......	......	......	....
33 years	......	......	......	......	......	......	....
34 years	1	......	......	......	......	......	....
35 years	1	1	......	......	......	......	....
36 years	......	......	......	......	......	......	....
37 years	......	......	......	......	......	......	....
38 years	......	......	......	......	......	......	....
39 years	......	......	......	......	......	......	....
40 years	......	......	......	......	......	......	....
41 years	......	......	......	......	......	......	....
42 years	......	......	......	......	......	......	....
43 years	......	......	......	......	......	......	....
44 years	......	......	......	......	......	......	....
45 years	......	......	......	......	......	......	....
46 years	1	......	......	......	......	......	....
47 years	......	......	......	......	......	......	....
48 years	......	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	......	......	......	......	......	......	....
Age not stated	4	......	......	1	......	......	....

of stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number child of not stated
MOTHER NOT STATED									
1	1	1	......	......	......	......	......	......	3
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	1	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	1	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	3

Table 25 — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive of mother, according to the number of child*

AGE OF MOTHER	All births	NUMBER OF CHILD					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
		TOTAL CHILDREN BORN TO					
Total	902	284	187	118	87	69	41
15 years or under	7	7	......	......	......	......	....
16 years	22	20	2	......	......	......	....
17 years	31	26	3	2	......	......	....
18 years	50	36	14	......	......	......	....
19 years	61	35	19	6	......	......	....
20 years	67	33	26	4	4	......	....
21 years	59	22	26	7	3	1	....
22 years	41	17	11	9	4	......	....
23 years	46	11	11	14	5	3	2
24 years	51	17	13	9	7	3	1
25 years	41	7	10	11	5	5	2
26 years	41	11	10	7	6	5	1
27 years	49	12	13	8	7	3	2
28 years	48	4	6	11	5	11	2
29 years	45	5	4	8	8	9	7
30 years	30	3	3	2	4	3	2
31 years	26	5	2	4	3	5	4
22 years	23	1	2	3	5	2	2
33 years	23	3	2	2	2	5	3
34 years	19	1	3	2	4	1	3
35 years	22	1	1	2	4	4	3
36 years	16	......	2	......	3	3	1
37 years	17	1	2	3	2	1	1
38 years	22	3	1	2	1	2	1
39 years	9	......	......	......	......	......	2
40 years	13	1	......	1	1	1	1
41 years	2	......	......	......	1	......	....
42 years	8	1	......	......	1	1	1
43 years	3	......	......	......	1	......	....
44 years	3	......	1	......	......	......	....
45 years	1	......	......	......	1	......	....
46 years	......	......	......	......	......	......	....
47 years	1	......	......	......	......	......	....
48 years	......	......	......	......	......	......	....
49 years	1	......	......	......	......	......	....
50 years and over	2	1	......	......	......	......	....
Age not stated	2	......	......	1	......	1	....

stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth: **1921 — (Continued)**

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
NEGRO MOTHERS									
34	**31**	**17**	**15**	**6**	**8**	**2**	**1**	**1**	**1**
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	1
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	....
....	......	1	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	....
4	......	......	......	......	......	......	......	......	....
4	3	1	1	......	......	......	......	......	....
2	2	......	......	......	......	......	......	......	....
6	3	3	......	1	......	......	......	......	....
....	3	......	......	......	......	......	......	......	....
4	2	1	1	......	1	......	......	......	....
....	3	......	2	......	......	......	......	......	....
3	1	......	1	......	......	......	......	......	....
1	1	3	......	......	2	......	......	......	....
2	2	2	......	......	......	......	......	1	....
2	1	2	......	1	1	......	......	......	....
1	2	2	3	2	1	1	......	......	....
....	4	......	2	1	......	......	......	......	....
1	2	......	2	1	2	......	......	......	....
....	......	......	1	......	......	......	......	......	....
1	1	1	......	......	......	1	......	......	....
....	......	......	1	......	......	......	1	......	....
....	1	1	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	1	......	......	......	......	......	....
....	......	......	......	......	1	......	......	......	....
....	......	......	......	......	......	......	......	......	....

Table 25 — State of New York (exclusive of New York City): *Births (exclusive of mother, according to the number of child*

AGE OF MOTHER	All births	Number of Child					
		First child	Second child	Third child	Fourth child	Fifth child	Sixth child
		Total Children Born to Other					
Total	125	35	16	21	11	11	7
15 years or under	......	......	......	......	......	......	....
16 years	1	1	......	......	......	......	....
17 years	5	5	......	......	......	......	....
18 years	6	5	1	......	......	......	....
19 years	4	4	......	......	......	......	....
20 years	6	5	......	1	......	......	....
21 years	7	4	1	1	1	......	....
22 years	5	1	1	3	......	......	....
23 years	7	2	1	2	1	1	....
24 years	10	2	4	4	......	......	....
25 years	2	......	1	1	......	......	....
26 years	10	1	3	1	4	1	....
27 years	3	......	......	1	1	1	....
28 years	8	3	......	1	......	2	2
29 years	2	......	......	......	......	1	1
30 years	7	1	1	1	1	......	....
31 years	6	......	1	1	1	2	1
32 years	5	1	1	......	2	......	....
33 years	3	......	......	......	......	1	....
34 years	4	......	......	3	......	1	....
35 years	3	......	......	......	......	1	1
36 years	6	......	1	1	......	......	....
37 years	1	......	......	......	......	......	1
38 years	7	......	......	......	......	......	....
39 years	2	......	......	......	......	......	....
40 years	2	......	......	......	......	......	....
41 years	......	......	......	......	......	......	....
42 years	......	......	......	......	......	......	....
43 years	......	......	......	......	......	......	....
44 years	2	......	......	......	......	......	1
45 years	1	......	......	......	......	......	....
46 years	......	......	......	......	......	......	....
47 years	......	......	......	......	......	......	....
48 years	......	......	......	......	......	......	....
49 years	......	......	......	......	......	......	....
50 years and over	......	......	......	......	......	......	....
Age not stated	......	......	......	......	......	......	....

stillbirths), by age, and color of mother, and for white children by country of birth of in order of birth 1921 — (Concluded)

IN ORDER OF BIRTH

Seventh child	Eighth child	Ninth child	Tenth child	Eleventh child	Twelfth child	Thirteenth child	Fourteenth child	Fifteenth child or over	Number of child not stated
COLORED MOTHERS									
6	**5**	**5**	**4**	**3**	......	......	......	**1**	......
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
2	......	1	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	1	......	......	......	......	......	....
1	......	1	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	1	......	......	......	......	......	......	......	....
....	2	......	1	1	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
1	1	3	1	1	......	......	......	......	....
1	......	......	1	......	......	......	......	......	....
1	1	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	1	....
....	......	......	......	1	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....
....	......	......	......	......	......	......	......	......	....

Table 26 — STATE OF NEW YORK (exclusive of New York City): *Distribution of according to the number of the child in order of living children*

Line No.	COLOR AND COUNTRY OF BIRTH OF MOTHER; NUMBER OF CHILD IN ORDER OF BIRTH	Total living births, 1921	BIRTHS IN ORDER OF LIVING CHILDREN							
			1st living child	2d living child	3d living child	4th living child	5th living child	6th living child	7th living child	8th living child
1	**State of New York (exclusive of New York City)**	**105,969**	**34,865**	**23,403**	**16,555**	**11,375**	**7,440**	**5,076**	**3,132**	**1,897**
	Number of child in order of birth:									
2	First child	31,336	31,336	......	......	......	......	......	......	......
3	Second child	21,864	2,849	19,014	......	......	......	......	......	......
4	Third child	15,975	489	3,317	12,166	......	......	......	......	......
5	Fourth child	11,237	114	722	2,991	7,409	......	......	......	......
6	Fifth child	7,916	42	201	878	2,461	4,334	......	......	......
7	Sixth child	5,592	21	77	300	873	1,758	2,561	......	......
8	Seventh child	4,064	5	33	121	376	762	1,297	1,470	......
9	Eighth child	2,863	5	14	49	132	318	680	823	842
10	Ninth child	1,894	1	14	17	54	147	284	421	517
11	Tenth child	1,254	1	5	13	38	68	122	214	288
12	Eleventh child	738	......	2	12	8	26	72	111	130
13	Twelfth child	448	......	......	6	13	10	34	45	62
14	Thirteenth child	252	1	2	......	7	6	17	19	32
15	Fourteenth child	141	......	1	2	3	4	5	14	15
16	Fifteenth child	69	......	......	......	......	3	2	10	6
17	Sixteenth child	25	......	......	......	......	......	1	2	3
18	Seventeenth child	13	......	......	......	......	1	......	1	1
19	Eighteenth child	7	......	......	......	......	1	......	......	......
20	Nineteenth child	5	......	......	......	1	1	1	......	......
21	Twentieth child	6	......	......	......	......	1	......	1	1
22	Twenty-first child	......	......	......	......	......	......	......	......	......
23	Twenty-second child	......	......	......	......	......	......	......	......	......
24	Twenty-third child	......	......	......	......	......	......	......	......	......
25	Twenty-fourth child	1	......	......	......	......	......	......	......	......
26	Twenty-fifth child	1	......	......	......	......	......	......	1	......
27	Number of child not stated	268	1	1	......	......	......	......	......	......
28	**Total children born to native white mothers**	**73,306**	**28,096**	**17,743**	**11,052**	**6,688**	**3,831**	**2,412**	**1,447**	**892**
	Number of child in order of birth:									
29	First child	25,513	25,513	......	......	......	......	......	......	......
30	Second child	16,993	2,163	14,830	......	......	......	......	......	......
31	Third child	11,232	319	2,323	8,587	......	......	......	......	......
32	Fourth child	6,964	62	421	1,808	4,672	......	......	......	......
33	Fifth child	4,347	25	103	449	1,327	2,443	......	......	......
34	Sixth child	2,709	7	35	125	437	870	1,324	......	......
35	Seventh child	1,951	3	14	55	159	332	636	752	......
36	Eighth child	1,252	3	10	16	46	108	273	379	417
37	Ninth child	828	......	4	9	21	33	104	180	269
38	Tenth child	518	......	3	2	17	26	36	73	114
39	Eleventh child	288	......	......	......	1	11	21	32	43
40	Twelfth child	191	......	......	1	2	3	11	11	25
41	Thirteenth child	120	......	......	......	4	2	7	10	13
42	Fourteenth child	62	......	......	......	2	2	......	6	6
43	Fifteenth child	33	......	......	......	......	1	......	3	3
44	Sixteenth child	12	......	......	......	......	......	......	......	1
45	Seventeenth child	4	......	......	......	......	......	......	......	1
46	Eighteenth child	2	......	......	......	......	......	......	......	......
47	Nineteenth child	......	......	......	......	......	......	......	......	......
48	Twentieth child	2	......	......	......	......	......	......	1	......
49	Twenty-first child	......	......	......	......	......	......	......	......	......
50	Twenty-second child	......	......	......	......	......	......	......	......	......
51	Twenty-third child	......	......	......	......	......	......	......	......	......
52	Twenty-fourth child	......	......	......	......	......	......	......	......	......
53	Twenty-fifth child	......	......	......	......	......	......	......	......	......
54	Number of child not stated	195	1	......	......	......	......	......	......	......

N.B.—First living child, second living child, etc., means the number of children living at the time of and including the present birth.

children in order of birth, by color and for white children by country of birth of mother of mother including the 1921 *birth:* 1921

OF MOTHER, INCLUDING THE 1921 BIRTH													
9th living child	10th living child	11th living child	12th living child	13th living child	14th living child	15th living child	16th living child	17th living child	18th living child	19th living child	20th living child	Number not stated	Line No.
1,029	**518**	**225**	**106**	**45**	**16**	**8**	**2**	**1**	.....	.....	.....	**276**	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	7
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
437	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	10
286	219	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
155	140	81	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	12
85	78	68	47	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
44	43	35	27	19	.....	.....	.....	.....	.....	.....	.....	.....	14
14	24	25	17	11	6	.....	.....	.....	.....	.....	.....	.....	15
6	8	7	7	11	5	4	.....	.....	.....	.....	.....	.....	16
.....	3	3	5	3	3	1	1	.....	.....	.....	.....	.....	17
1	2	3	2	1	.....	1	.....	.....	.....	.....	.....	.....	18
.....	1	1	.....	.....	2	1	.....	1	.....	.....	.....	.....	19
.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	20
1	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	21
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	266	27
458	**260**	**123**	**59**	**31**	**8**	**4**	**1**	**1**	.....	.....	.....	**200**	28
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	31
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	32
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	33
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	34
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
207	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	37
131	116	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38
64	72	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
36	38	37	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
14	19	19	16	16	.....	.....	.....	.....	.....	.....	.....	.....	41
3	11	15	10	6	1	.....	.....	.....	.....	.....	.....	.....	42
2	2	5	3	7	4	3	.....	.....	.....	.....	.....	.....	43
.....	2	2	3	1	2	.....	1	.....	.....	.....	.....	.....	44
1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	45
.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	46
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	48
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	194	54

time of the 1921 birth. For instance there were 1,029 mothers who had 9 children living at the

Table 26 — STATE OF NEW YORK (exclusive of New York City): *Distribution of according to the number of the child in order of living children*

Line No.	COLOR AND COUNTRY OF BIRTH OF MOTHER; NUMBER OF CHILD IN ORDER OF BIRTH	Total living births, 1921	BIRTHS IN ORDER OF LIVING CHILDREN							
			1st living child	2d living child	3d living child	4th living child	5th living child	6th living child	7th living child	8th living child
1	**Total children born to foreign born white mothers**............	**31,614**	**6,386**	**5,433**	**5,354**	**4,598**	**3,535**	**2,622**	**1,648**	**978**
	Number of child in order of birth:									
2	First child..........	5,495	5,495	......	......	......	......	......	......	......
3	Second child........	4,665	651	4,013	......	......	......	......	......	......
4	Third child.........	4,601	153	958	3,490	......	......	......	......	......
5	Fourth child........	4,175	51	288	1,153	2,683	......	......	......	......
6	Fifth child..........	3,489	17	95	409	1,114	1,854	......	......	......
7	Sixth child..........	2,744	12	40	172	427	872	1,220	......	......
8	Seventh child.......	2,072	2	19	63	212	421	651	704	......
9	Eighth child........	1,574	2	3	82	85	205	401	434	412
10	Ninth child.........	1,043	1	10	7	83	111	174	236	242
11	Tenth child.........	717	1	1	10	21	40	85	136	170
12	Eleventh child......	441	......	2	12	7	14	50	79	86
13	Twelfth child.......	249	......	......	4	11	6	22	32	36
14	Thirteenth child.....	130	1	2	......	3	4	10	9	18
15	Fourteenth child....	78	......	1	2	1	2	5	8	8
16	Fifteenth child......	34	......	......	......	......	2	2	6	3
17	Sixteenth child......	13	......	......	......	......	......	1	2	2
18	Seventeenth child....	9	......	......	......	......	1	......	1	......
19	Eighteenth child....	5	......	......	......	......	1	......	......	......
20	Nineteenth child....	5	......	......	......	1	1	1	......	......
21	Twentieth child.....	4	......	......	......	......	1	......	......	1
22	Twenty-first child...	......	......	......	......	......	......	......	......	......
23	Twenty-second child.	......	......	......	......	......	......	......	......	......
24	Twenty-third child...	......	......	......	......	......	......	......	......	......
25	Twenty-fourth child.	1	......	......	......	......	......	......	......	......
26	Twenty-fifth child...	1	......	......	......	......	......	......	1	......
27	Number of child not stated............	69	......	1	......	......	......	......	......	......
28	**Total children born to white mothers, country of birth not stated**.............	**22**	**10**	**2**	**3**	......	......	**1**	**3**	......
	Number of child in order of birth:									
29	First child..........	9	9	......	......	......	......	......	......	......
30	Second child........	3	1	2	......	......	......	......	......	......
31	Third child..........	3	......	......	3	......	......	......	......	......
32	Fourth child........	......	......	......	......	......	......	......	......	......
33	Fifth child..........	......	......	......	......	......	......	......	......	......
34	Sixth child..........	1	......	......	......	......	......	1	......	......
35	Seventh child.......	1	......	......	......	......	......	......	1	......
36	Eighth child........	1	......	......	......	......	......	......	1	......
37	Ninth child.........	1	......	......	......	......	......	......	1	......
38	Tenth child.........	......	......	......	......	......	......	......	......	......
39	Eleventh child......	......	......	......	......	......	......	......	......	......
40	Twelfth child.......	......	......	......	......	......	......	......	......	......
41	Thirteenth child.....	......	......	......	......	......	......	......	......	......
42	Fourteenth child....	......	......	......	......	......	......	......	......	......
43	Fifteenth child......	......	......	......	......	......	......	......	......	......
44	Sixteenth child......	......	......	......	......	......	......	......	......	......
45	Seventeenth child....	......	......	......	......	......	......	......	......	......
46	Eighteenth child....	......	......	......	......	......	......	......	......	......
47	Nineteenth child....	......	......	......	......	......	......	......	......	......
48	Twentieth child.....	......	......	......	......	......	......	......	......	......
49	Twenty-first child...	......	......	......	......	......	......	......	......	......
50	Twenty-second child.	......	......	......	......	......	......	......	......	......
51	Twenty-third child..	......	......	......	......	......	......	......	......	......
52	Twenty-fourth child.	......	......	......	......	......	......	......	......	......
53	Twenty-fifth child...	......	......	......	......	......	......	......	......	......
54	Number of child not stated...........	3	......	......	......	......	......	......	......	......

children in order of birth, by color and for white children by country of birth of mother of mother, including the 1921 *birth:* 1921 — (Continued)

OF MOTHER, INCLUDING THE 1921 BIRTH													Line No.
9th living child	10th living child	11th living child	12th living child	13th living child	14th living child	15th living child	16th living child	17th living child	18th living child	19th living child	20th living child	Number not stated	
565	**251**	**99**	**47**	**13**	**8**	**4**	**1**	......	......	......	......	**72**	1
......	......	......	......	......	......	......	......	......	......	......	......	......	2
......	......	......	......	......	......	......	......	......	......	......	......	1	3
......	......	......	......	......	......	......	......	......	......	......	......	......	4
......	......	......	......	......	......	......	......	......	......	......	......	......	5
......	......	......	......	......	......	......	......	......	......	......	......	......	6
......	......	......	......	......	......	......	......	......	......	......	......	1	7
......	......	......	......	......	......	......	......	......	......	......	......	......	8
......	......	......	......	......	......	......	......	......	......	......	......	......	9
228	......	......	......	......	......	......	......	......	......	......	......	1	10
153	100	......	......	......	......	......	......	......	......	......	......	......	11
90	65	35	......	......	......	......	......	......	......	......	......	1	12
48	39	31	20	......	......	......	......	......	......	......	......	......	13
30	24	15	11	3	......	......	......	......	......	......	......	......	14
11	13	10	7	5	5	......	......	......	......	......	......	......	15
4	6	2	4	3	1	1	......	......	......	......	......	......	16
......	1	1	2	2	1	1	......	......	......	......	......	......	17
......	2	2	2	......	......	1	......	......	......	......	......	......	18
......	1	1	......	......	1	1	......	......	......	......	......	......	19
......	......	1	1	......	......	......	......	......	......	......	......	......	20
1	......	......	......	......	......	......	1	......	......	......	......	......	21
......	......	......	......	......	......	......	......	......	......	......	......	......	22
......	......	......	......	......	......	......	......	......	......	......	......	......	23
......	......	......	......	......	......	......	......	......	......	......	......	......	24
......	......	1	......	......	......	......	......	......	......	......	......	......	25
......	......	......	......	......	......	......	......	......	......	......	......	......	26
......	......	......	......	......	......	......	......	......	......	......	......	68	27
......	......	......	......	......	......	......	......	......	......	......	......	3	28
......	......	......	......	......	......	......	......	......	......	......	......	......	29
......	......	......	......	......	......	......	......	......	......	......	......	......	30
......	......	......	......	......	......	......	......	......	......	......	......	......	31
......	......	......	......	......	......	......	......	......	......	......	......	......	32
......	......	......	......	......	......	......	......	......	......	......	......	......	33
......	......	......	......	......	......	......	......	......	......	......	......	......	34
......	......	......	......	......	......	......	......	......	......	......	......	......	35
......	......	......	......	......	......	......	......	......	......	......	......	......	36
......	......	......	......	......	......	......	......	......	......	......	......	......	37
......	......	......	......	......	......	......	......	......	......	......	......	......	38
......	......	......	......	......	......	......	......	......	......	......	......	......	39
......	......	......	......	......	......	......	......	......	......	......	......	......	40
......	......	......	......	......	......	......	......	......	......	......	......	......	41
......	......	......	......	......	......	......	......	......	......	......	......	......	42
......	......	......	......	......	......	......	......	......	......	......	......	......	43
......	......	......	......	......	......	......	......	......	......	......	......	......	44
......	......	......	......	......	......	......	......	......	......	......	......	......	45
......	......	......	......	......	......	......	......	......	......	......	......	......	46
......	......	......	......	......	......	......	......	......	......	......	......	......	47
......	......	......	......	......	......	......	......	......	......	......	......	......	48
......	......	......	......	......	......	......	......	......	......	......	......	......	49
......	......	......	......	......	......	......	......	......	......	......	......	......	50
......	......	......	......	......	......	......	......	......	......	......	......	......	51
......	......	......	......	......	......	......	......	......	......	......	......	......	52
......	......	......	......	......	......	......	......	......	......	......	......	......	53
......	......	......	......	......	......	......	......	......	......	......	......	3	54

Table 26 — STATE OF NEW YORK (exclusive of New York City): *Distribution of according to the number of the child in order of living children*

Line No.	COLOR AND COUNTRY OF BIRTH OF MOTHER; NUMBER OF CHILD IN ORDER OF BIRTH	Total living births, 1921	BIRTHS IN ORDER OF LIVING CHILDREN							
			1st living child	2d living child	3d living child	4th living child	5th living child	6th living child	7th living child	8th living child
1	**Country of birth of mother: England, Scotland and Wales; Total births**	**1,539**	**528**	**357**	**245**	**180**	**85**	**66**	**36**	**17**
	Number of child in order of birth:									
2	First child	472	472	......	......	......	......	......	......	......
3	Second child	347	50	297	......	......	......	......	......	......
4	Third child	239	4	47	188	......	......	......	......	......
5	Fourth child	180	1	11	42	126	......	......	......	......
6	Fifth child	104	1	2	13	32	56	......	......	......
7	Sixth child	75	......	......	2	14	13	46	......	......
8	Seventh child	43	......	......	......	4	13	10	16	......
9	Eighth child	27	......	......	......	1	2	7	9	8
10	Ninth child	17	......	......	......	2	1	2	4	4
11	Tenth child	18	......	......	......	1	......	1	4	4
12	Eleventh child	7	......	......	......	......	......	......	2	......
13	Twelfth child	4	......	......	......	......	......	......	......	1
14	Thirteenth child	2	......	......	......	......	......	......	......	......
15	Fourteenth child	......	......	......	......	......	......	......	......	......
16	Fifteenth child	1	......	......	......	......	......	......	1	......
17	Sixteenth child	......	......	......	......	......	......	......	......	......
18	Seventeenth child	......	......	......	......	......	......	......	......	......
19	Eighteenth child	......	......	......	......	......	......	......	......	......
20	Nineteenth child	......	......	......	......	......	......	......	......	......
21	Twentieth child	......	......	......	......	......	......	......	......	......
22	Twenty-first child	......	......	......	......	......	......	......	......	......
23	Twenty-second child	......	......	......	......	......	......	......	......	......
24	Twenty-third child	......	......	......	......	......	......	......	......	......
25	Twenty-fourth child	......	......	......	......	......	......	......	......	......
26	Twenty-fifth child	......	......	......	......	......	......	......	......	......
27	Number of child not stated	3	......	......	......	......	......	......	......	......
28	**Country of birth of mother: Ireland Total births**	**1,488**	**356**	**330**	**274**	**211**	**131**	**84**	**53**	**28**
	Number of child in order of birth:									
29	First child	316	316	......	......	......	......	......	......	......
30	Second child	298	30	268	......	......	......	......	......	......
31	Third child	264	8	46	210	......	......	......	......	......
32	Fourth child	204	2	11	41	150	......	......	......	......
33	Fifth child	139	......	4	14	43	78	......	......	......
34	Sixth child	103	......	......	7	10	35	51	......	......
35	Seventh child	59	......	......	1	4	8	17	29	......
36	Eighth child	55	......	1	1	3	6	10	18	16
37	Ninth child	24	......	......	......	......	3	3	5	4
38	Tenth child	15	......	......	......	1	1	1	1	8
39	Eleventh child	3	......	......	......	......	......	1	......	......
40	Twelfth child	2	......	......	......	......	......	1	......	......
41	Thirteenth child	......	......	......	......	......	......	......	......	......
42	Fourteenth child	......	......	......	......	......	......	......	......	......
43	Fifteenth child	......	......	......	......	......	......	......	......	......
44	Sixteenth child	......	......	......	......	......	......	......	......	......
45	Seventeenth child	......	......	......	......	......	......	......	......	......
46	Eighteenth child	......	......	......	......	......	......	......	......	......
47	Nineteenth child	......	......	......	......	......	......	......	......	......
48	Twentieth child	......	......	......	......	......	......	......	......	......
49	Twenty-first child	......	......	......	......	......	......	......	......	......
50	Twenty-second child	......	......	......	......	......	......	......	......	......
51	Twenty-third child	......	......	......	......	......	......	......	......	......
52	Twenty-fourth child	......	......	......	......	......	......	......	......	......
53	Twenty-fifth child	......	......	......	......	......	......	......	......	......
54	Number of child not stated	6	......	......	......	......	......	......	......	......

children in order of birth, by color and for white children by country of birth of mother, of mother, including the 1921 *birth:* 1921 — (Continued)

OF MOTHER, INCLUDING THE 1921 BIRTH													
9th living child	10th living child	11th living child	12th living child	13th living child	14th living child	15th living child	16th living child	17th living child	18th living child	19th living child	20th living child	Number not stated	Line No.
10	7	4	1	......	......	......	......	......	......	......	......	3	1
......	......	......	......	......	......	......	......	......	......	......	......	......	2
......	......	......	......	......	......	......	......	......	......	......	......	......	3
......	......	......	......	......	......	......	......	......	......	......	......	......	4
......	......	......	......	......	......	......	......	......	......	......	......	......	5
......	......	......	......	......	......	......	......	......	......	......	......	......	6
......	......	......	......	......	......	......	......	......	......	......	......	......	7
......	......	......	......	......	......	......	......	......	......	......	......	......	8
......	......	......	......	......	......	......	......	......	......	......	......	......	9
4	......	......	......	......	......	......	......	......	......	......	......	......	10
5	3	......	......	......	......	......	......	......	......	......	......	......	11
......	4	1	......	......	......	......	......	......	......	......	......	......	12
......	......	2	1	......	......	......	......	......	......	......	......	......	13
1	......	1	......	......	......	......	......	......	......	......	......	......	14
......	......	......	......	......	......	......	......	......	......	......	......	......	15
......	......	......	......	......	......	......	......	......	......	......	......	......	16
......	......	......	......	......	......	......	......	......	......	......	......	......	17
......	......	......	......	......	......	......	......	......	......	......	......	......	18
......	......	......	......	......	......	......	......	......	......	......	......	......	19
......	......	......	......	......	......	......	......	......	......	......	......	......	20
......	......	......	......	......	......	......	......	......	......	......	......	......	21
......	......	......	......	......	......	......	......	......	......	......	......	......	22
......	......	......	......	......	......	......	......	......	......	......	......	......	23
......	......	......	......	......	......	......	......	......	......	......	......	......	24
......	......	......	......	......	......	......	......	......	......	......	......	......	25
......	......	......	......	......	......	......	......	......	......	......	......	......	26
......	......	......	......	......	......	......	......	......	......	......	......	3	27
12	2	1	......	......	......	......	......	......	......	......	......	6	28
......	......	......	......	......	......	......	......	......	......	......	......	......	29
......	......	......	......	......	......	......	......	......	......	......	......	......	30
......	......	......	......	......	......	......	......	......	......	......	......	......	31
......	......	......	......	......	......	......	......	......	......	......	......	......	32
......	......	......	......	......	......	......	......	......	......	......	......	......	33
......	......	......	......	......	......	......	......	......	......	......	......	......	34
......	......	......	......	......	......	......	......	......	......	......	......	......	35
......	......	......	......	......	......	......	......	......	......	......	......	......	36
9	......	......	......	......	......	......	......	......	......	......	......	......	37
3	......	......	......	......	......	......	......	......	......	......	......	......	38
......	1	1	......	......	......	......	......	......	......	......	......	......	39
......	1	......	......	......	......	......	......	......	......	......	......	......	40
......	......	......	......	......	......	......	......	......	......	......	......	......	41
......	......	......	......	......	......	......	......	......	......	......	......	......	42
......	......	......	......	......	......	......	......	......	......	......	......	......	43
......	......	......	......	......	......	......	......	......	......	......	......	......	44
......	......	......	......	......	......	......	......	......	......	......	......	......	45
......	......	......	......	......	......	......	......	......	......	......	......	......	46
......	......	......	......	......	......	......	......	......	......	......	......	......	47
......	......	......	......	......	......	......	......	......	......	......	......	......	48
......	......	......	......	......	......	......	......	......	......	......	......	......	49
......	......	......	......	......	......	......	......	......	......	......	......	......	50
......	......	......	......	......	......	......	......	......	......	......	......	......	51
......	......	......	......	......	......	......	......	......	......	......	......	......	52
......	......	......	......	......	......	......	......	......	......	......	......	......	53
......	......	......	......	......	......	......	......	......	......	......	......	6	54

Table 26 — STATE OF NEW YORK (exclusive of New York City): *Distribution of according to the number of the child in order of living children*

Line No.	COLOR AND COUNTRY OF BIRTH OF MOTHER; NUMBER OF CHILD IN ORDER OF BIRTH	Total living births, 1921	BIRTHS IN ORDER OF LIVING CHILDREN							
			1st living child	2d living child	3d living child	4th living child	5th living child	6th living child	7th living child	8th living child
	Country of birth of mother: Germany (exclusive of German Poland):									
1	**Total births**	**1,115**	**209**	**205**	**182**	**146**	**103**	**97**	**73**	**46**
	Number of child in order of birth:									
2	First child	178	178	.....	.....	.....	.....	.....	.....	.....
3	Second child	195	26	169	.....	.....	.....	.....	.....	.....
4	Third child	167	5	32	130	.....	.....	.....	.....	.....
5	Fourth child	136	.....	4	40	92	.....	.....	.....	.....
6	Fifth child	101	.....	.....	6	28	67	.....	.....	.....
7	Sixth child	79	.....	.....	5	14	23	37	.....	.....
8	Seventh child	82	.....	.....	1	7	8	31	35	.....
9	Eighth child	53	.....	.....	.....	1	3	11	17	21
10	Ninth child	43	.....	.....	.....	1	2	10	8	9
11	Tenth child	30	.....	.....	.....	2	.....	7	8	5
12	Eleventh child	24	.....	.....	.....	.....	.....	.....	2	9
13	Twelfth child	9	.....	.....	.....	1	.....	1	.....	1
14	Thirteenth child	8	.....	.....	.....	.....	.....	.....	1	.....
15	Fourteenth child	5	.....	.....	.....	.....	.....	.....	1	.....
16	Fifteenth child	3	.....	.....	.....	.....	.....	.....	1	1
17	Sixteenth child	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	Seventeenth child	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	Eighteenth child	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	Nineteenth child	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Twentieth child	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	Twenty-first child	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	Twenty-second child	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Twenty-third child	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Twenty-fourth child	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	Twenty-fifth child	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Number of child not stated	2	.....	.....	.....	.....	.....	.....	.....	.....
	Country of birth of mother: Italy									
28	**Total births**	**12,082**	**2,529**	**1,718**	**1,756**	**1,686**	**1,492**	**1,158**	**773**	**473**
	Number of child in order of birth:									
29	First child	2,181	2,181	.....	.....	.....	.....	.....	.....	.....
30	Second child	1,441	233	1,207	.....	.....	.....	.....	.....	.....
31	Third child	1,453	60	326	1,067	.....	.....	.....	.....	.....
32	Fourth child	1,429	28	101	405	895	.....	.....	.....	.....
33	Fifth child	1,351	11	39	146	426	729	.....	.....	.....
34	Sixth child	1,174	10	19	70	182	388	504	.....	.....
35	Seventh child	956	2	11	30	102	177	305	329	.....
36	Eighth child	750	2	2	17	45	106	178	197	203
37	Ninth child	463	1	6	3	13	54	81	102	108
38	Tenth child	345	.....	1	7	7	23	35	67	83
39	Eleventh child	235	.....	2	9	5	6	30	44	41
40	Twelfth child	124	.....	.....	2	8	1	14	21	14
41	Thirteenth child	64	1	2	.....	2	3	4	2	12
42	Fourteenth child	45	.....	1	.....	.....	.....	3	4	8
43	Fifteenth child	18	.....	.....	.....	.....	2	2	4	2
44	Sixteenth child	8	.....	.....	.....	.....	.....	1	1	2
45	Seventeenth child	4	.....	.....	.....	.....	1	.....	1	.....
46	Eighteenth child	5	.....	.....	.....	.....	1	.....	.....	.....
47	Nineteenth child	3	.....	.....	.....	1	.....	1	.....	.....
48	Twentieth child	3	.....	.....	.....	.....	1	.....	.....	.....
49	Twenty-first child	.....	.....	.....	.....	.....	.....	.....	.....	.....
50	Twenty-second child	.....	.....	.....	.....	.....	.....	.....	.....	.....
51	Twenty-third child	.....	.....	.....	.....	.....	.....	.....	.....	.....
52	Twenty-fourth child	1	.....	.....	.....	.....	.....	.....	.....	.....
53	Twenty-fifth child	1	.....	.....	.....	.....	.....	.....	1	.....
54	Number of child not stated	28	.....	1	.....	.....	.....	.....	.....	.....

children in order of birth, by color and for white children by country of birth of mother, of mother, including the 1921 *birth:* **1921 — (Continued)**

OF MOTHER, INCLUDING THE 1921 BIRTH													
9th living child	10th living child	11th living child	12th living child	13th living child	14th living child	15th living child	16th living child	17th living child	18th living child	19th living child	20th living child	Number not stated	Line No.
18	13	5	1	.....	.....	.....	.....	.....	.....	.....	.....	2	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
5	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
3	4	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
1	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	27
39	17	3	3	.....	.....	1	.....	.....	.....	.....	.....	5	28
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	33
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	34
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
8	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38
5	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
4	2	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
3	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	41
.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	42
.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	43
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	44
.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	54

Table 26 — STATE OF NEW YORK (exclusive of New York City): ***Distribution of according to the number of the child in order of living children***

Line No.	COLOR AND COUNTRY OF BIRTH OF MOTHER; NUMBER OF CHILD IN ORDER OF BIRTH	Total living births. 1921	BIRTHS IN ORDER OF LIVING CHILDREN							
			1st living child	2d living child	3d living child	4th living child	5th living child	6th living child	7th living child	8th living child
	Country of birth of mother: Hungary									
1	**Total births**	**646**	**87**	**107**	**127**	**110**	**79**	**58**	**40**	**20**
	Number of child in order of birth:									
2	First child	68	68							
3	Second child	90	15	75						
4	Third child	107	4	15	88					
5	Fourth child	94		12	25	57				
6	Fifth child	72		1	7	29	35			
7	Sixth child	54		3	3	10	14	24		
8	Seventh child	52		1	1	11	15	11	13	
9	Eighth child	44			2		7	15	12	8
10	Ninth child	21					5	2	8	4
11	Tenth child	23			1	1		4	6	2
12	Eleventh child	8				1	2	2		2
13	Twelfth child	7					1			4
14	Thirteenth child	3				1			1	
15	Fourteenth child									
16	Fifteenth child									
17	Sixteenth child									
18	Seventeenth child									
19	Eighteenth child									
20	Nineteenth child									
21	Twentieth child									
22	Twenty-first child									
23	Twenty-second child									
24	Twenty-third child									
25	Twenty-fourth child									
26	Twenty-fifth child									
27	Number of child not stated	3								
	Country of birth of mother: Poland (includes Russian, Austrian, German and not specified)									
28	**Total births**	**6,240**	**662**	**991**	**1,274**	**1,109**	**795**	**617**	**357**	**206**
	Number of child in order of birth:									
29	First child	530	530							
30	Second child	734	98	636						
31	Third child	1,044	22	236	786					
32	Fourth child	1,019	9	81	296	633				
33	Fifth child	838	1	24	117	296	400			
34	Sixth child	643	1	8	44	110	211	269		
35	Seventh child	458		4	16	43	99	160	136	
36	Eighth child	359			8	16	44	102	110	79
37	Ninth child	253		2	2	6	28	39	58	64
38	Tenth child	161	1		1	4	7	27	28	39
39	Eleventh child	77			3		2	8	13	16
40	Twelfth child	55				1	3	5	6	7
41	Thirteenth child	28					1	5	3	1
42	Fourteenth child	18			1			2	3	
43	Fifteenth child	7								
44	Sixteenth child	1								
45	Seventeenth child	3								
46	Eighteenth child									
47	Nineteenth child	1								
48	Twentieth child									
49	Twenty-first child									
50	Twenty-second child									
51	Twenty-third child									
52	Twenty-fourth child									
53	Twenty-fifth child									
54	Number of child not stated	11								

children in order of birth, by color and for white children by country of birth of mother, of mother, including the 1921 *birth:* 1921 — (Continued)

OF MOTHER, INCLUDING THE 1921 BIRTH													
9th living child	10th living child	11th living child	12th living child	13th living child	14th living child	15th living child	16th living child	17th living child	18th living child	19th living child	20th living child	Number not stated	Line No.
8	6	1										3	1
													2
													3
													4
													5
													6
													7
													8
													9
2													10
4	5												11
1													12
1	1												13
		1											14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25
													26
												3	27
128	47	24	13	3	2							12	28
													29
													30
													31
													32
													33
													34
													35
													36
54													37
34	20												38
18	10	6										1	39
11	8	11	3										40
9	3	2	3	1									41
1	5	3		1	2								42
1	1	1	3	1									43
			1										44
		1	2										45
													46
			1										47
													48
													49
													50
													51
													52
													53
												11	54

Table 26 — STATE OF NEW YORK (exclusive of New York City): *Distribution of* *according to the number of the child in order of living children*

Line No.	COLOR AND COUNTRY OF BIRTH OF MOTHER: NUMBER OF CHILD IN ORDER OF BIRTH	Total living births, 1921	BIRTHS IN ORDER OF LIVING CHILDREN							
			1st living child	2d living child	3d living child	4th living child	5th living child	6th living child	7th living child	8th living child
1	**Country of birth of mother: Canada (French)** **Total births**	**2,097**	**673**	**452**	**287**	**228**	**177**	**114**	**59**	**42**
	Number of child in order of birth:									
2	First child	607	607							
3	Second child	435	55	380						
4	Third child	272	8	53	211					
5	Fourth child	222	2	17	50	153				
6	Fifth child	174	1	2	18	49	104			
7	Sixth child	118			5	14	41	58		
8	Seventh child	80			1	8	19	28	24	
9	Eighth child	62				2	6	15	18	21
10	Ninth child	45			1	1	2	7	8	10
11	Tenth child	27				1	2	3	4	5
12	Eleventh child	18					1	3	5	1
13	Twelfth child	13			1					2
14	Thirteenth child	8								2
15	Fourteenth child	6					1			
16	Fifteenth child	1								
17	Sixteenth child	3								
18	Seventeenth child									
19	Eighteenth child									
20	Nineteenth child	1					1			
21	Twentieth child	1								1
22	Twenty-first child									
23	Twenty-second child									
24	Twenty-third child									
25	Twenty-fourth child									
26	Twenty-fifth child									
27	Number of child not stated	4								
28	**Country of birth of mother: Canada (other)** **Total births**	**1,794**	**600**	**410**	**242**	**192**	**143**	**94**	**43**	**30**
	Number of child in order of birth:									
29	First child	541	541							
30	Second child	395	51	344						
31	Third child	235	6	48	181					
32	Fourth child	188	1	16	42	129				
33	Fifth child	145	1	2	14	41	87			
34	Sixth child	94			4	12	34	44		
35	Seventh child	62			1	6	12	26	17	
36	Eighth child	47				2	4	13	12	16
37	Ninth child	31				1	2	6	7	5
38	Tenth child	24				1	2	3	4	5
39	Eleventh child	13					1	2	3	1
40	Twelfth child	9								2
41	Thirteenth child	2								
42	Fourteenth child	2					1			
43	Fifteenth child	1								
44	Sixteenth child	1								
45	Seventeenth child									
46	Eighteenth child									
47	Nineteenth child									
48	Twentieth child	1								1
49	Twenty-first child									
50	Twenty-second child									
51	Twenty-third child									
52	Twenty-fourth child									
53	Twenty-fifth child									
54	Number of child not stated	3								

children in order of birth, by color and for white children by country of birth of mother, of mother, including the 1921 *birth:* 1921 — (Continued)

OF MOTHER, INCLUDING THE 1921 BIRTH													
9th living child	10th living child	11th living child	12th living child	13th living child	14th living child	15th living child	16th living child	17th living child	18th living child	19th living child	20th living child	Number not stated	Line No.
27	18	9	3	2	1	......	......	......	......	......	......	5	1
......	......	......	......	......	......	......	......	......	......	......	......	......	2
......	......	......	......	......	......	......	......	......	......	......	......	......	3
......	......	......	......	......	......	......	......	......	......	......	......	......	4
......	......	......	......	......	......	......	......	......	......	......	......	......	5
......	......	......	......	......	......	......	......	......	......	......	......	......	6
......	......	......	......	......	......	......	......	......	......	......	......	......	7
......	......	......	......	......	......	......	......	......	......	......	......	......	8
......	......	......	......	......	......	......	......	......	......	......	......	......	9
15	......	......	......	......	......	......	......	......	......	......	......	1	10
5	7	......	......	......	......	......	......	......	......	......	......	......	11
2	5	1	......	......	......	......	......	......	......	......	......	......	12
1	2	5	2	......	......	......	......	......	......	......	......	......	13
3	1	1	......	1	......	......	......	......	......	......	......	......	14
1	2	2	......	......	......	......	......	......	......	......	......	......	15
......	......	......	......	1	......	......	......	......	......	......	......	......	16
......	1	......	1	......	1	......	......	......	......	......	......	......	17
......	......	......	......	......	......	......	......	......	......	......	......	......	18
......	......	......	......	......	......	......	......	......	......	......	......	......	19
......	......	......	......	......	......	......	......	......	......	......	......	......	20
......	......	......	......	......	......	......	......	......	......	......	......	......	21
......	......	......	......	......	......	......	......	......	......	......	......	......	22
......	......	......	......	......	......	......	......	......	......	......	......	......	23
......	......	......	......	......	......	......	......	......	......	......	......	......	24
......	......	......	......	......	......	......	......	......	......	......	......	......	25
......	......	......	......	......	......	......	......	......	......	......	......	......	26
......	......	......	......	......	......	......	......	......	......	......	......	4	27
16	12	6	2	1	......	......	......	......	......	......	......	3	28
......	......	......	......	......	......	......	......	......	......	......	......	......	29
......	......	......	......	......	......	......	......	......	......	......	......	......	30
......	......	......	......	......	......	......	......	......	......	......	......	......	31
......	......	......	......	......	......	......	......	......	......	......	......	......	32
......	......	......	......	......	......	......	......	......	......	......	......	......	33
......	......	......	......	......	......	......	......	......	......	......	......	......	34
......	......	......	......	......	......	......	......	......	......	......	......	......	35
......	......	......	......	......	......	......	......	......	......	......	......	......	36
10	......	......	......	......	......	......	......	......	......	......	......	......	37
3	6	......	......	......	......	......	......	......	......	......	......	......	38
1	4	1	......	......	......	......	......	......	......	......	......	......	39
1	1	4	1	......	......	......	......	......	......	......	......	......	40
1	1	......	......	......	......	......	......	......	......	......	......	......	41
......	......	1	......	......	......	......	......	......	......	......	......	......	42
......	......	......	......	1	......	......	......	......	......	......	......	......	43
......	......	......	1	......	......	......	......	......	......	......	......	......	44
......	......	......	......	......	......	......	......	......	......	......	......	......	45
......	......	......	......	......	......	......	......	......	......	......	......	......	46
......	......	......	......	......	......	......	......	......	......	......	......	......	47
......	......	......	......	......	......	......	......	......	......	......	......	......	48
......	......	......	......	......	......	......	......	......	......	......	......	......	49
......	......	......	......	......	......	......	......	......	......	......	......	......	50
......	......	......	......	......	......	......	......	......	......	......	......	......	51
......	......	......	......	......	......	......	......	......	......	......	......	......	52
......	......	......	......	......	......	......	......	......	......	......	......	......	53
......	......	......	......	......	......	......	......	......	......	......	......	3	54

Table 26 — STATE OF NEW YORK (exclusive of New York City): *Distri*
according to the number of the child in order of living

Line No.	COLOR AND COUNTRY OF BIRTH OF MOTHER, NUMBER OF CHILD IN ORDER OF BIRTH	Total living births 1921	BIRTHS IN ORDER OF LIVING 1st living child	 2nd living child	 3d living child	 4th living child	 5th living child	 6th living child	 7t livi chi
	Country of birth of mother: Norway, Sweden and Denmark								
1	**Total births**	**463**	**147**	**109**	**81**	**49**	**26**	**23**	
	Number of child in order of birth:								
2	First child	134	134	......	......	......	......	......	...
3	Second child	103	11	92	......	......	......	......	...
4	Third child	77	1	15	61	......	......	......	...
5	Fourth child	47	......	......	17	30	......	......	...
6	Fifth child	36	1	2	2	15	16	......	...
7	Sixth child	27	......	......	1	3	9	14	...
8	Seventh child	17	......	......	......	1	1	7	
9	Eighth child	8	......	......	......	......	......	2	
10	Ninth child	4	......	......	......	......	......	......	
11	Tenth child	3	......	......	......	......	......	......	...
12	Eleventh child	3	......	......	......	......	......	......	...
13	Twelfth child	1	......	......	......	......	......	......	...
14	Thirteenth child	1	......	......	......	......	......	......	...
15	Fourteenth child	......	......	......	......	......	......	......	...
16	Fifteenth child	......	......	......	......	......	......	......	...
17	Sixteenth child	......	......	......	......	......	......	......	...
18	Seventeenth child	1	......	......	......	......	......	......	...
19	Eighteenth child	......	......	......	......	......	......	......	...
20	Nineteenth child	......	......	......	......	......	......	......	...
21	Twentieth child	......	......	......	......	......	......	......	...
22	Twenty-first child	......	......	......	......	......	......	......	...
23	Twenty-second child	......	......	......	......	......	......	......	...
24	Twenty-third child	......	......	......	......	......	......	......	...
25	Twenty-fourth child	......	......	......	......	......	......	......	...
26	Twenty-fifth child	......	......	......	......	......	......	......	...
27	Number of child not stated	1	......	......	......	......	......	......	...
28	**Total children born to other foreign-born white mothers**	**1,434**	**424**	**310**	**233**	**178**	**102**	**71**	
	Number of child in order of birth:								
29	First child	364	364	......	......	......	......	......	...
30	Second child	295	47	248	......	......	......	......	...
31	Third child	193	7	39	147	......	......	......	...
32	Fourth child	178	3	14	54	107	......	......	...
33	Fifth child	126	2	7	22	39	56	......	...
34	Sixth child	82	1	2	7	16	21	35	...
35	Seventh child	67	......	......	2	6	15	19	
36	Eighth child	41	......	......	1	4	3	11	
37	Ninth child	31	......	......	......	2	4	5	
38	Tenth child	21	......	......	......	2	2	1	
39	Eleventh child	15	......	......	......	1	1	......	
40	Twelfth child	10	......	......	......	1	......	......	
41	Thirteenth child	4	......	......	......	......	......	......	
42	Fourteenth child	......	......	......	......	......	......	......	...
43	Fifteenth child	2	......	......	......	......	......	......	...
44	Sixteenth child	1	......	......	......	......	......	......	...
45	Seventeenth child	......	......	......	......	......	......	......	...
46	Eighteenth child	......	......	......	......	......	......	......	...
47	Nineteenth child	......	......	......	......	......	......	......	...
48	Twentieth child	......	......	......	......	......	......	......	...
49	Twenty-first child	......	......	......	......	......	......	......	...
50	Twenty-second child	......	......	......	......	......	......	......	...
51	Twenty-third child	......	......	......	......	......	......	......	...
52	Twenty fourth child	......	......	......	......	......	......	......	...
53	Twenty-fifth child	......	......	......	......	......	......	......	...
54	Number of child not stated	4	......	......	......	......	......	......	...

children in order of birth, by color and for white children by country of birth of mother, of mother, including the 1921 *births:* 1921 — (Continued)

OF MOTHER, INCLUDING THE 1921 BIRTH													
9th living child	10th living child	11th living child	12th living child	13th living child	14th living child	15th living child	16th living child	17th living child	18th living child	19th living child	20th living child	Number not stated	Line No.
3	3	1	......	......	......	1	......	......	......	......	......	1	1
......	......	......	......	......	......	......	......	......	......	......	......	......	2
......	......	......	......	......	......	......	......	......	......	......	......	......	3
......	......	......	......	......	......	......	......	......	......	......	......	......	4
......	......	......	......	......	......	......	......	......	......	......	......	......	5
......	......	......	......	......	......	......	......	......	......	......	......	......	6
......	......	......	......	......	......	......	......	......	......	......	......	......	7
......	......	......	......	......	......	......	......	......	......	......	......	......	8
......	......	......	......	......	......	......	......	......	......	......	......	......	9
1	......	......	......	......	......	......	......	......	......	......	......	......	10
1	2	......	......	......	......	......	......	......	......	......	......	......	11
......	1	......	......	......	......	......	......	......	......	......	......	......	12
......	......	1	......	......	......	......	......	......	......	......	......	......	13
1	......	......	......	......	......	......	......	......	......	......	......	......	14
......	......	......	......	......	......	......	......	......	......	......	......	......	15
......	......	......	......	......	......	......	......	......	......	......	......	......	16
......	......	......	......	......	......	......	......	......	......	......	......	......	17
......	......	......	......	......	......	1	......	......	......	......	......	......	18
......	......	......	......	......	......	......	......	......	......	......	......	......	19
......	......	......	......	......	......	......	......	......	......	......	......	......	20
......	......	......	......	......	......	......	......	......	......	......	......	......	21
......	......	......	......	......	......	......	......	......	......	......	......	......	22
......	......	......	......	......	......	......	......	......	......	......	......	......	23
......	......	......	......	......	......	......	......	......	......	......	......	......	24
......	......	......	......	......	......	......	......	......	......	......	......	......	25
......	......	......	......	......	......	......	......	......	......	......	......	......	26
......	......	......	......	......	......	......	......	......	......	......	......	1	27
22	7	1	......	......	1	......	......	......	......	......	......	4	28
......	......	......	......	......	......	......	......	......	......	......	......	......	29
......	......	......	......	......	......	......	......	......	......	......	......	......	30
......	......	......	......	......	......	......	......	......	......	......	......	......	31
......	......	......	......	......	......	......	......	......	......	......	......	......	32
......	......	......	......	......	......	......	......	......	......	......	......	......	33
......	......	......	......	......	......	......	......	......	......	......	......	......	34
......	......	......	......	......	......	......	......	......	......	......	......	......	35
......	......	......	......	......	......	......	......	......	......	......	......	......	36
8	......	......	......	......	......	......	......	......	......	......	......	......	37
5	3	......	......	......	......	......	......	......	......	......	......	......	38
6	......	1	......	......	......	......	......	......	......	......	......	......	39
3	2	......	......	......	......	......	......	......	......	......	......	......	40
......	1	......	......	......	......	......	......	......	......	......	......	......	41
......	......	......	......	......	......	......	......	......	......	......	......	......	42
......	1	......	......	......	1	......	......	......	......	......	......	......	43
......	......	......	......	......	......	......	......	......	......	......	......	......	44
......	......	......	......	......	......	......	......	......	......	......	......	......	45
......	......	......	......	......	......	......	......	......	......	......	......	......	46
......	......	......	......	......	......	......	......	......	......	......	......	......	47
......	......	......	......	......	......	......	......	......	......	......	......	......	48
......	......	......	......	......	......	......	......	......	......	......	......	......	49
......	......	......	......	......	......	......	......	......	......	......	......	......	50
......	......	......	......	......	......	......	......	......	......	......	......	......	51
......	......	......	......	......	......	......	......	......	......	......	......	......	52
......	......	......	......	......	......	......	......	......	......	......	......	......	53
......	......	......	......	......	......	......	......	......	......	......	......	4	54

Table 26 — STATE OF NEW YORK (exclusive of New York City): *Distribution of according to the number of the child in order of living children*

Line Number	COLOR AND COUNTRY OF BIRTH OF MOTHER; NUMBER OF CHILD IN ORDER OF BIRTH	Total living births, 1921	BIRTHS IN ORDER OF LIVING CHILDREN							
			1st living child	2d living child	3d living child	4th living child	5th living child	6th living child	7th living child	8th living child
1	**Total children born to Negro mothers**	**992**	**332**	**203**	**121**	**80**	**66**	**35**	**29**	**24**
	Number of child in ord r of birth:									
2	First child	284	284	...	...	...	...	...	...	...
3	Second child	187	31	156	...	...	...	...	...	...
4	Third child	118	14	30	74	...	...	...	...	...
5	Fourth child	87	1	12	25	49	...	...	...	...
6	Fifth child	69	...	2	16	17	34	...	...	...
7	Sixth child	41	2	2	2	8	14	13	...	...
8	Seventh child	34	...	...	1	5	8	8	12	...
9	Eighth child	31	...	...	1	1	4	6	7	12
10	Ninth child	17	...	...	...	...	2	6	3	5
11	Tenth child	15	...	1	1	...	2	1	4	3
12	Eleventh child	6	...	...	...	...	1	...	...	1
13	Twelfth child	8	...	...	1	...	1	1	2	1
14	Thirteenth child	2	...	...	...	...	...	...	...	1
15	Fourteenth child	1	...	...	...	...	...	...	...	1
16	Fifteenth child	1	...	...	...	...	...	...	1	...
17	Sixteenth child	...	...	...	...	...	...	...	...	...
18	Seventeenth child	...	...	...	...	...	...	...	...	...
19	Eighteenth child	...	...	...	...	...	...	...	...	...
20	Nineteenth child	...	...	...	...	...	...	...	...	...
21	Twentieth child	...	...	...	...	...	...	...	...	...
22	Twenty-first child	...	...	...	...	...	...	...	...	...
23	Twenty-second child	...	...	...	...	...	...	...	...	...
24	Twenty-third child	...	...	...	...	...	...	...	...	...
25	Twenty-fourth child	...	...	...	...	...	...	...	...	...
26	Twenty-fifth child	...	...	...	...	...	...	...	...	...
27	Number of child not stated	1	...	...	...	...	...	...	...	...
28	**Total children born to other colored mothers**	**125**	**41**	**22**	**25**	**9**	**8**	**6**	**5**	**3**
	Number of child in ord r of birth:									
29	First child	35	35	...	...	...	...	...	...	...
30	Second child	16	3	13	...	...	...	...	...	...
31	Third child	21	3	6	12	...	...	...	...	...
32	Fourth child	11	...	1	5	5	...	...	...	...
33	Fifth child	11	...	1	4	3	3	...	...	...
34	Sixth child	7	...	...	1	1	2	3	...	...
35	Seventh child	6	...	...	2	...	1	2	1	...
36	Eighth child	5	...	1	...	...	1	...	2	1
37	Ninth child	5	...	...	1	...	1	...	1	1
38	Tenth child	4	...	...	...	...	...	...	1	1
39	Eleventh child	3	...	...	...	...	...	1	...	...
40	Twelfth child	...	...	...	...	...	...	...	...	...
41	Thirteenth child	...	...	...	...	...	...	...	...	...
42	Fourteenth child	...	...	...	...	...	...	...	...	...
43	Fifteenth child	1	...	...	...	...	...	...	...	...
44	Sixteenth child	...	...	...	...	...	...	...	...	...
45	Seventeenth child	...	...	...	...	...	...	...	...	...
46	Eighteenth child	...	...	...	...	...	...	...	...	...
47	Nineteenth child	...	...	...	...	...	...	...	...	...
48	Twentieth child	...	...	...	...	...	...	...	...	...
49	Twenty-first child	...	...	...	...	...	...	...	...	...
50	Twenty-second child	...	...	...	...	...	...	...	...	...
51	Twenty-third child	...	...	...	...	...	...	...	...	...
52	Twenty-fourth child	...	...	...	...	...	...	...	...	...
53	Twenty-fifth child	...	...	...	...	...	...	...	...	...
54	Number of child not stated	...	...	...	...	...	...	...	...	...

children in order of birth, by color and for white children by country of birth of mother, of mother including the 1921 *birth:* 1921 — (Continued)

OF MOTHER, INCLUDING THE 1921 BIRTH													
9th living child	10th living child	11th living child	12th living child	13th living child	14th living child	15th living child	16th living child	17th living child	18th living child	19th living child	20th living child	Number not stated	Line Number
3	6	2	......	......	......	......	......	......	......	......	......	1	1
......	......	......	......	......	......	......	......	......	......	......	......	......	2
......	......	......	......	......	......	......	......	......	......	......	......	......	3
......	......	......	......	......	......	......	......	......	......	......	......	......	4
......	......	......	......	......	......	......	......	......	......	......	......	......	5
......	......	......	......	......	......	......	......	......	......	......	......	......	6
......	......	......	......	......	......	......	......	......	......	......	......	......	7
......	......	......	......	......	......	......	......	......	......	......	......	......	8
......	......	......	......	......	......	......	......	......	......	......	......	......	9
1	......	......	......	......	......	......	......	......	......	......	......	......	10
1	2	......	......	......	......	......	......	......	......	......	......	......	11
......	3	1	......	......	......	......	......	......	......	......	......	......	12
1	1	......	......	......	......	......	......	......	......	......	......	......	13
......	......	1	......	......	......	......	......	......	......	......	......	......	14
......	......	......	......	......	......	......	......	......	......	......	......	......	15
......	......	......	......	......	......	......	......	......	......	......	......	......	16
......	......	......	......	......	......	......	......	......	......	......	......	......	17
......	......	......	......	......	......	......	......	......	......	......	......	......	18
......	......	......	......	......	......	......	......	......	......	......	......	......	19
......	......	......	......	......	......	......	......	......	......	......	......	......	20
......	......	......	......	......	......	......	......	......	......	......	......	......	21
......	......	......	......	......	......	......	......	......	......	......	......	......	22
......	......	......	......	......	......	......	......	......	......	......	......	......	23
......	......	......	......	......	......	......	......	......	......	......	......	......	24
......	......	......	......	......	......	......	......	......	......	......	......	......	25
......	......	......	......	......	......	......	......	......	......	......	......	......	26
......	......	......	......	......	......	......	......	......	......	......	......	1	27
3	1	1	......	1	......	......	......	......	......	......	......	......	28
......	......	......	......	......	......	......	......	......	......	......	......	......	29
......	......	......	......	......	......	......	......	......	......	......	......	......	30
......	......	......	......	......	......	......	......	......	......	......	......	......	31
......	......	......	......	......	......	......	......	......	......	......	......	......	32
......	......	......	......	......	......	......	......	......	......	......	......	......	33
......	......	......	......	......	......	......	......	......	......	......	......	......	34
......	......	......	......	......	......	......	......	......	......	......	......	......	35
......	......	......	......	......	......	......	......	......	......	......	......	......	36
1	......	......	......	......	......	......	......	......	......	......	......	......	37
1	1	......	......	......	......	......	......	......	......	......	......	......	38
1	......	1	......	......	......	......	......	......	......	......	......	......	39
......	......	......	......	......	......	......	......	......	......	......	......	......	40
......	......	......	......	......	......	......	......	......	......	......	......	......	41
......	......	......	......	......	......	......	......	......	......	......	......	......	42
......	......	......	......	1	......	......	......	......	......	......	......	......	43
......	......	......	......	......	......	......	......	......	......	......	......	......	44
......	......	......	......	......	......	......	......	......	......	......	......	......	45
......	......	......	......	......	......	......	......	......	......	......	......	......	46
......	......	......	......	......	......	......	......	......	......	......	......	......	47
......	......	......	......	......	......	......	......	......	......	......	......	......	48
......	......	......	......	......	......	......	......	......	......	......	......	......	49
......	......	......	......	......	......	......	......	......	......	......	......	......	50
......	......	......	......	......	......	......	......	......	......	......	......	......	51
......	......	......	......	......	......	......	......	......	......	......	......	......	52
......	......	......	......	......	......	......	......	......	......	......	......	......	53
......	......	......	......	......	......	......	......	......	......	......	......	......	54

Table 27 — STATE OF NEW YORK (exclusive of New York City): *Number*
children by c

AGE OF MOTHER	Sex	All plural births	Total	COUNTRY			
				United States	Total	England	Ireland
							N
TOTAL ALL AGES:							
Living	Total	2,184	2,169	1 434	735	34	
	Males	1,081	1,070	702	368	17	
	Females	1 103	1,099	732	367	17	
Stillborn	Total	1 4	161	124	37	......	
	Males	91	89	64	25	......	....
	Females	73	72	60	12	......	
15 years							
Living	Total	2	2	2	......	......	....
	Males	......	......	......	......	......	....
	Females	2	2	2	......	......	....
17 years							
Living	Total	11	11	9	2	......	....
	Males	5	5	3	2	......	....
	Females	6	6	6	......	......	....
Stillborn	Total	1	1	1	......	......	....
	Males	1	1	1	......	......	....
	Females	......	......	......	......	......	....
18 years							
Living	Total	30	28	24	4	......	....
	Males	13	11	10	1	......	....
	Females	17	17	14	3	......	....
Stillborn	Total	2	2	2	......	......	....
	Males	1	1	1	......	......	....
	Females	1	1	1	......	......	....
19 years							
Living	Total	50	50	38	12	......	....
	Males	30	30	25	5	......	....
	Females	20	20	13	7	......	....
Stillborn	Total	8	8	8	......	......	....
	Males	3	3	3	......	......	....
	Females	5	5	5	......	......	....
20–24 years							
Living	Total	411	409	325	84	4	
	Males	201	199	157	42	......	
	Females	210	210	168	42	4	
Stillborn	Total	35	35	31	4	......	....
	Males	16	16	12	4	......	....
	Females	19	19	19	......	......	....
25–29 years							
Living	Total	603	596	397	199	4	
	Males	309	304	202	102	1	
	Females	294	292	195	97	3	
Stillborn	Total	49	48	35	13	......	
	Males	30	29	20	9	......	....
	Females	19	19	15	4	......	
30–34 years							
Living	Total	529	529	325	204	10	
	Males	259	259	160	99	6	
	Females	270	270	165	105	4	
Stillborn	Total	33	33	23	10	......	....
	Males	21	21	13	8	......	....
	Females	12	12	10	2	......	....

births (including stillbirths), by age of mother according to sex and color, and for white birth of mother: **1921**

CHILDREN								COLORED CHILDREN			
OF MOTHER											
COUNTRY											
Italy	Russia (includes Russian Poland)	Austria (includes Austrian Poland)	Hungary	Poland (not specified)	Canada	Norway, Sweden and Denmark	Other foreign countries	Total	Negro	American Indian	Japanese
TWINS: 1921											
273	49	61	20	147	37	8	43	15	7	6	2
143	25	24	7	75	17	5	19	11	5	4	2
130	24	37	13	72	20	3	24	4	2	2	......
17	3	3	2	3	3	......	5	3	3	......	......
11	3	3	......	1	2	......	4	2	2	......	......
6	......	......	2	2	1	......	1	1	1	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	2	......	......	......	......
......	......	......	......	......	......	......	2	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	2	......	......	2	2	......	......	2
......	......	......	......	......	......	......	1	2	......	......	2
......	......	......	......	2	......	......	1	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
8	......	......	2	......	......	......	2	......	......	......	......
3	......	......	......	......	......	......	2	......	......	......	......
5	......	......	2	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
31	10	4	2	14	6	......	7	2	2	......	......
17	4	2	2	6	4	......	3	2	2	......	......
14	6	2	......	8	2	......	4	......	......	......	......
1	......	2	......	......	......	......	1	......	......	......	......
1	......	2	......	......	......	......	1	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
71	14	20	8	39	13	6	11	7	3	4	......
36	10	7	4	25	6	3	3	5	2	3	......
35	4	13	4	14	7	3	8	2	1	1	......
5	2	......	......	1	1	......	3	1	1	......	......
4	2	......	......	......	......	......	3	1	1	......	......
1	......	......	......	1	1	......	......	......	......	......	......
71	11	19	6	41	8	2	12	......	......	......	......
38	3	6	......	20	3	2	3	......	......	......	......
33	8	13	6	21	5	......	9	......	......	......	......
5	1	1	......	1	2	......	......	......	......	......	......
4	1	1	......	......	2	......	......	......	......	......	......
1	......	......	......	1	......	......	......	......	......	......	......

Table 27 — STATE OF NEW YORK (exclusive of New York City): *Number o*
children by country

AGE OF MOTHER		Sex	All plural births	Total	COUNTRY			
					United States	Total	England	Ireland
								Nu
35–30 years								
	Living	Total	426	422	238	184	12	8
		Males	200	198	107	91	8	2
		Females	226	224	131	93	4	6
	Stillborn	Total	24	24	16	8	......	......
		Males	14	14	11	3	......	......
		Females	10	10	5	5	......	......
40–44 years								
	Living	Total	118	118	74	44	4	2
		Males	62	62	38	24	2	2
		Females	56	56	36	20	2	......
	Stillborn	Total	12	10	8	2	......	......
		Males	5	4	3	1	......	......
		Females	7	6	5	1	......	......
45–49 years								
	Living	Total	2	2	......	2	......	......
		Males	2	2	......	2	......	......
		Females	......	......	......	......	......	......
Age not stated								
	Living	Total	2	2	2	......	......	......
		Males	......	......	......	......	......	......
		Females	2	2	2	......	......	......
								Nu
Total all ages								
	Living	Total	25	22	8	14	......	......
		Males	8	8	5	3	......	......
		Females	17	14	3	11	......	......
	Stillborn	Total	5	5	1	4	......	......
		Males	2	2	1	1	......	......
		Females	3	3	......	3	......	......
20–24 years								
	Living	Total	6	6	3	3	......	......
		Males	......	......	......	......	......	......
		Females	6	6	3	3	......	......
25–29 years								
	Living	Total	3	3	......	3	......	......
		Males	2	2	......	2	......	......
		Females	1	1	......	1	......	......
30–34 years								
	Living	Total	10	7	2	5	......	......
		Males	2	2	2	......	......	......
		Females	8	5	......	5	......	......
	Stillborn	Total	2	2	1	1	......	......
		Males	1	1	1	......	......	......
		Females	1	1	......	1	......	......
35–39 years								
	Living	Total	6	6	3	3	......	......
		Males	4	4	3	1	......	......
		Females	2	2	......	2	......	......
40–45 years								
	Stillborn	Total	3	3	......	3	......	......
		Males	1	1	......	1	......	......
		Females	2	2	......	2	......	......

births (including stillbirths), by age of mother according to sex and color, and for white of mother: 1921 — (Concluded)

CHILDREN OF MOTHER COUNTRY								COLORED CHILDREN			
Italy	Russia (includes Russian Poland)	Austria (includes Austrian Poland)	Hungary	Poland (not specified)	Canada	Norway, Sweden and Denmark	Other foreign countries	Total	Negro	American Indian	Japanese
TWINS: 1921 — *Concluded*											
77	10	14	2	40	6	......	5	4	2	2	......
43	4	8	1	18	1	......	3	2	1	1	......
34	6	6	1	22	5	......	2	2	1	1	......
5	......	......	2	......	......	......	1	......	......	......	......
2	......	......	1	......	......	......	......	......	......	......	......
3	......	......	1	......	......	......	1	......	......	......	......
15	2	4	......	11	4	......	2	......	......	......	......
6	2	1	......	6	3	......	2	......	......	......	......
9	......	3	......	5	1	......	......	......	......	......	......
1	......	......	......	1	......	......	......	2	2	......	......
......	......	......	......	1	......	......	......	1	1	......	......
1	......	......	......	......	......	......	......	1	1	......	......
......	2	......	......	......	......	......	......	......	......	......	......
......	2	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
TRIPLETS: 1921 — *Concluded*											
12	......	......	......	2	......	......	......	3	3	......	......
3	......	......	......	......	......	......	......	......	......	......	......
9	......	......	......	2	......	......	......	3	3	......	......
3	......	......	......	1	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......	......	......
2	......	......	......	1	......	......	......	......	......	......	......
3	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
3	......	......	......	......	......	......	......	......	......	......	......
3	......	......	......	......	......	......	......	......	......	......	......
2	......	......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......	......	......
3	......	......	......	2	......	......	......	3	3	......	......
......	......	......	......	......	......	......	......	......	......	......	......
3	......	......	......	2	......	......	......	3	3	......	......
......	......	......	......	1	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	1	......	......	......	......	......	......	......
3	......	......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......	......	......
2	......	......	......	......	......	......	......	......	......	......	......
3	......	......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......	......	......
2	......	......	......	......	......	......	......	......	......	......	......

Table 28 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive* *life:*

CAUSE OF DEATH	Sex	All deaths under 1 year	DEATHS AT					
			Under 1 day	1–7 days	8–14 days	15–21 days	22–31 days	Total under 1 month
Total deaths under 1 year of age, from all causes	M	4,793	1,125	936	289	198	120	2,668
	F	3,729	857	718	222	150	84	2,031
	T	**8,522**	**1,982**	**1,654**	**511**	**348**	**204**	**4,699**
Communicable diseases (1–16)	M	210	......	2	2	4	2	10
	F	205	......	......	3	7	6	16
	T	**415**	......	**2**	**5**	**11**	**8**	**26**
Respiratory diseases (31, 97–107)	M	546	1	28	32	30	18	109
	F	418	4	19	22	25	12	82
	T	**964**	**5**	**47**	**54**	**55**	**30**	**191**
Gastro-intestinal diseases (112–113)	M	987	1	21	36	37	26	121
	F	784	......	26	24	26	24	100
	T	**1,771**	**1**	**47**	**60**	**63**	**50**	**221**
Congenital malformations (159)	M	428	98	167	30	23	9	327
	F	357	97	120	24	19	10	270
	T	**785**	**195**	**287**	**54**	**42**	**19**	**597**
Premature birth (161-a)	M	1,225	710	330	81	43	19	1,183
	F	960	528	284	66	36	17	931
	T	**2,185**	**1,238**	**614**	**147**	**79**	**36**	**2,114**
Congenital debility (160)	M	275	39	49	32	21	16	157
	F	217	26	54	23	9	7	119
	T	**492**	**65**	**103**	**55**	**30**	**23**	**276**
Injuries at birth (161-b)	M	365	195	151	16	......	1	363
	F	252	139	96	11	3	......	249
	T	**617**	**334**	**247**	**27**	**3**	**1**	**612**
Other causes in early infancy (162–163)	M	147	53	59	19	10	3	144
	F	116	39	46	19	3	1	108
	T	**263**	**92**	**105**	**38**	**13**	**4**	**252**
All other causes	M	610	28	129	41	30	26	254
	F	420	24	73	30	22	7	156
	T	**1,030**	**52**	**202**	**71**	**52**	**33**	**410**

of stillbirths), by sex, from important causes for certain subdivisions of the first year of 1921

Age of—										
1 month	2 months	3 months	4 months	5 months	6 months	7 months	8 months	9 months	10 months	11 months
402	314	250	213	183	152	138	141	116	101	115
288	231	196	173	159	154	116	94	105	107	75
690	**545**	**446**	**386**	**342**	**306**	**254**	**235**	**221**	**208**	**190**
22	19	15	19	19	11	14	17	20	19	25
26	18	11	14	18	10	15	22	19	23	13
48	**37**	**26**	**33**	**37**	**21**	**29**	**39**	**39**	**42**	**38**
71	46	48	36	34	46	38	35	25	29	29
41	41	35	26	45	30	24	19	29	31	15
112	**87**	**83**	**62**	**79**	**76**	**62**	**54**	**54**	**60**	**44**
142	131	105	104	87	61	51	64	52	31	38
88	100	86	85	71	77	48	29	36	32	32
230	**231**	**191**	**189**	**158**	**138**	**99**	**93**	**88**	**63**	**70**
24	22	16	12	9	4	5	......	3	2	4
31	17	6	7	6	8	3	5	2	......	2
55	**39**	**22**	**19**	**15**	**12**	**8**	**5**	**5**	**2**	**6**
32	5	3	2	......	......	......	......	......	......	......
17	10	1	1	......	......	......	......	......	......	......
49	**15**	**4**	**3**	......	......	......	......	......	......	......
46	29	15	8	3	8	2	1	1	3	2
27	15	16	15	10	3	5	5	1	1	......
73	**44**	**31**	**23**	**13**	**11**	**7**	**6**	**2**	**4**	**2**
2	......	......	......	......	......	......	......	......	......	......
2	1	......	......	......	......	......	......	......	......	......
4	**1**	......	......	......	......	......	......	......	......	......
1	2	......	......	......	......	......	......	......	......	......
6	2	......	......	......	......	......	......	......	......	......
7	**4**	......	......	......	......	......	......	......	......	......
62	60	48	32	31	22	28	24	15	17	17
50	27	41	25	9	26	21	14	18	20	13
112	**87**	**89**	**57**	**40**	**48**	**49**	**38**	**33**	**37**	**30**

Table 29 — State of New York (exclusive of New York City): *Deaths* (
children, b

AGE AT DEATH	Sex	All deaths under 1 year	COUN					
			Total	United States	Total	England, Scotland and Wales	Ireland	Germany (excludes German Poland)
Total deaths under 1 year	**Total** . . .	**8,522**	**8,367**	**5,719**	**2,574**	**108**	**95**	**83**
	Males . . .	**4,793**	**4,707**	**3,242**	**1,422**	**59**	**49**	**51**
	Females .	**3,729**	**3,660**	**2,477**	**1,152**	**49**	**46**	**32**
Under 1 day	**Total**	**1,982**	**1,949**	**1,436**	**493**	**34**	**21**	**10**
	Males . . .	1,125	1,108	830	271	15	11	7
	Females .	857	841	606	222	19	10	3
1–6 days	**Total**	**1,563**	**1,534**	**1,117**	**404**	**21**	**25**	**13**
	Males . . .	893	877	643	227	10	12	10
	Females .	670	657	474	177	11	13	3
7 days to 1 month . .	**Total**	**1,154**	**1,133**	**776**	**354**	**14**	**12**	**11**
	Males . . .	650	635	434	199	9	8	8
	Females .	504	498	342	155	5	4	3
1 and 2 months	**Total**	**1,235**	**1,219**	**853**	**349**	**14**	**13**	**15**
	Males . . .	716	711	496	201	10	11	9
	Females	519	508	357	148	4	2	6
3, 4 and 5 months . . .	**Total**	**1,174**	**1,155**	**735**	**407**	**12**	**8**	**13**
	Males . . .	646	634	400	225	6	3	7
	Females .	528	521	335	182	6	5	6
6, 7 and 8 months . . .	**Total**	**795**	**771**	**461**	**304**	**7**	**11**	**12**
	Males . . .	431	415	246	166	4	4	6
	Females .	364	356	215	138	3	7	6
9, 10 and 11 months.	**Total** . . .	**619**	**606**	**341**	**26**	**6**	**5**	**9**
	Males . . .	332	327	193	133	5	. . . . . .	4
	Females .	287	279	148	130	1	5	5

stillbirths) for certain subdivisions of the first year of life, by sex and color, and for white birth of mother: 1921

CHILDREN OF MOTHER Country												COLORED		
Russia (excludes Russian Poland)	Russian Poland	Austria (excludes Austrian Poland)	Austrian Poland	Hungary	Poland (not specified)	Total Poland	Canada	Norway, Sweden and Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Other colored
138	28	183	43	41	566	633	216	30	111	74	155	146	8	1
79	16	108	24	19	310	352	122	20	62	43	86	80	5	1
59	12	75	19	22	256	281	94	10	49	31	69	66	3	......
26	6	32	4	12	86	96	56	11	21	20	33	32	1	......
16	4	17	2	7	50	56	32	7	14	7	17	17	......	......
10	2	15	2	5	36	40	24	4	7	13	16	15	1	......
23	1	21	6	10	73	80	44	6	21	13	29	26	2	1
11	.....	13	5	3	41	46	26	4	9	7	16	14	1	1
12	1	8	1	7	32	34	18	2	12	6	13	12	1	......
18	5	27	5	5	86	97	29	3	13	3	21	20	1	......
10	5	18	2	.....	45	53	18	2	6	2	15	14	1	......
8	.....	9	3	5	41	44	11	1	7	1	6	6	......	......
18	4	37	5	3	77	86	21	4	17	17	16	16	......	......
9	.....	19	4	2	42	46	11	3	11	14	5	5	......	......
9	4	18	1	1	35	40	10	1	6	3	11	11	......	......
22	8	34	10	7	120	138	30	......	14	13	19	16	3	......
12	6	20	6	4	68	80	15	......	9	9	12	10	2	......
10	2	14	4	3	52	58	15	......	5	4	7	6	1	......
15	3	21	8	1	63	74	18	1	15	6	24	23	1	......
8	1	13	2	1	38	41	8	......	9	3	16	15	1	......
7	2	8	6	.....	25	33	10	1	6	3	8	8	......	......
16	1	11	5	3	55	62	18	5	10	2	13	13	......	......
13	.....	8	3	2	26	30	12	4	4	1	5	5	......	......
3	1	3	2	1	29	32	6	1	6	1	8	8	......	......

Table 30 — STATE OF NEW YORK (exclusive of New York City): ***Deaths*** ***children***

CAUSE OF DEATH	Sex	All deaths under 1 year	COU					
			Total	United States	Total	England, Scotland and Wales	Ireland	Germany (excludes German Poland)
Total deaths under 1 year	**Total**	**8,522**	**8,367**	**5,719**	**2,574**	**108**	**95**	**83**
	Males	**4,793**	**4,707**	**3,242**	**1,422**	**59**	**49**	**51**
	Females	**3,729**	**3,660**	**2,477**	**1,152**	**49**	**46**	**32**
Communicable diseases (1-16)	**Total**	**415**	**407**	**247**	**156**	**7**	**6**	**5**
	Males	210	206	130	73	2	3	1
	Females	205	201	117	83	5	3	4
Syphilis (38)	**Total**	**109**	**101**	**72**	**23**	**2**	**2**	**1**
	Males	64	61	38	18	1	2	1
	Females	45	40	34	5	1	......	......
Convulsions (80)	**Total**	**87**	**86**	**65**	**21**	......	**1**	**1**
	Males	56	55	37	18	......	1	1
	Females	31	31	28	3	......	......	......
Acute bronchitis, pneumonia and broncho pneumonia (99-A, 100-A, 101)	**Total**	**825**	**807**	**468**	**335**	**11**	**10**	**5**
	Males	471	461	280	177	5	4	4
	Females	354	346	188	158	6	6	1
Other respiratory diseases (31, 37c, 97A, 98, 99B, 102-107)	**Total**	**60**	**58**	**33**	**25**	......	......	**3**
	Males	36	34	19	15	......	......	2
	Females	24	24	14	10	......	......	1
Gastrointestinal diseases (112-113)	**Total**	**1,771**	**1,746**	**1,077**	**655**	**20**	**12**	**20**
	Males	987	970	580	380	15	6	14
	Females	784	776	497	275	5	6	6
Premature birth (161-A)	**Total**	**2,185**	**2,144**	**1,614**	**522**	**31**	**19**	**24**
	Males	1,225	1,205	915	286	16	12	18
	Females	960	939	699	236	15	7	6
Congenital debility, malformations, etc. (159, 160, 162, 163)	**Total**	**1,540**	**1,516**	**1,118**	**392**	**17**	**20**	**11**
	Males	850	838	634	202	6	8	8
	Females	690	678	484	190	11	12	3
Injuries at birth (161-B)	**Total**	**617**	**609**	**433**	**176**	**10**	**12**	**3**
	Males	365	362	268	94	4	5	1
	Females	252	247	165	82	6	7	2
External causes (175-203)	**Total**	**107**	**107**	**70**	**14**	**2**	**1**	**1**
	Males	48	48	32	7	2	......	......
	Females	59	59	38	7	......	1	1
All other causes	**Total**	**806**	**786**	**522**	**255**	**8**	**12**	**9**
	Males	481	467	309	152	8	8	1
	Females	325	319	213	103	......	4	8

stillbirths) under 1 *year of age from important causes by sex and color, and for white birth of mother:* 1921

CHILDREN												COLORED		
OF MOTHER														
Country														
Russia (excludes Russian Poland)	Russian Poland	Austria (excludes Austrian Poland)	Austrian Poland	Hungary	Poland (not specified)	Total Poland	Canada	Norway, Sweden and Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Other colored
138	**28**	**183**	**43**	**41**	**560**	**633**	**216**	**30**	**111**	**74**	**155**	**146**	**8**	**1**
79	**16**	**108**	**24**	**19**	**310**	**352**	**122**	**20**	**62**	**43**	**86**	**80**	**5**	**1**
59	**12**	**75**	**19**	**22**	**250**	**281**	**94**	**10**	**49**	**31**	**69**	**66**	**3**	
6	**2**	**8**	**1**	**1**	**27**	**30**	**11**	**2**	**7**	**4**	**8**	**8**		
5	1	3	1		16	18	6	1	2	3	4	4		
1	1	5		1	11	12	5	1	5	1	4	4		
1		**1**			**5**	**5**	**1**		**1**	**6**	**8**	**7**	**1**	
1		1			4	4	1		1	5	3	2	1	
					1	1				1	5	5		
1		**2**		**1**	**3**	**3**	**2**	**1**	**2**		**1**	**1**		
1		1		1	3	3		1	2		1	1		
		1					2							
14	**2**	**26**	**8**	**9**	**80**	**92**	**16**	**3**	**11**	**4**	**18**	**18**		
11	1	14	5	4	38	46	7	2	7	4	10	10		
3	1	12	3	5	42	46	9	1	4		8	8		
1		**1**	**2**		**1**	**3**	**2**	**1**			**2**	**2**		
		1	2		1	3					2	2		
1							2	1						
37	**13**	**53**	**11**	**6**	**192**	**216**	**42**	**3**	**31**	**14**	**25**	**22**	**3**	
19	6	37	6	4	110	122	23	3	16	10	17	14	3	
18	7	16	5	2	82	94	19		15	4	8	8		
27	**4**	**34**	**6**	**13**	**84**	**94**	**60**	**5**	**24**	**8**	**41**	**38**	**2**	**1**
15	2	22	3	6	45	50	33	3	12	4	20	18	1	1
12	2	12	3	7	39	44	27	2	12	4	21	20	1	
20	**2**	**25**	**7**	**3**	**89**	**98**	**46**	**7**	**16**	**6**	**24**	**24**		
11	2	9	3	1	46	51	31	4	9	2	12	12		
9		16	4	2	43	47	15	3	7	4	12	12		
7	**4**	**10**		**6**	**26**	**30**	**12**	**5**	**9**		**8**	**8**		
3	3	5		2	17	20	4	4	6		3	3		
4	1	5		4	9	10	8	1	3		5	5		
2		**1**			**2**	**2**	**1**			**23**				
1		1			1	1				9				
1					1	1	1			14				
22	**1**	**22**	**8**	**2**	**51**	**60**	**23**	**3**	**10**	**9**	**20**	**18**	**2**	
12	1	14	4	1	29	34	17	2	7	6	14	14		
10		8	4	1	22	26	6	1	3	3	6	4	2	

Table 31 (A) — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive and infant mortality rates for certain subdivisions of the first year of life, in cities and period* **1916–1920**

CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		BIRTHS (EXCLUSIVE OF STILLBIRTHS)		STILLBIRTHS	
		Total	Per 1,000 pop- ulation	Total	Per 1,000 living births
New York State (exclusive of New York Cities)	1921	105,969	22.1	3,942	37.2
	Annual average 1916–20	102,518	21.6	3,869	37.6
Cities and Villages over 7,000	1921	62,342	23.9	2,351	37.7
	Annual average, 1916–20	60,764	24.6	2,406	39.6
Rest of State	1921	43,542	20.4	1,591	36.5
	Annual average, 1916–20	41,754	18.6	1,463	35.0
Cities over 175,000	1921	*24,405*	*24.3*	*937*	*38.4*
	Annual average, 1916–20	24,181	25.9	973	40.2
Buffalo	1921	13,227	25.4	528	39.8
	Annual average, 1916–20	13,308	27.3	532	40.0
Rochester	1921	6,821	22.3	247	36.2
	Annual average, 1916–20	6,752	24.8	256	37.9
Syracuse	1921	4,357	24.3	164	37.6
	Annual average, 1916–20	4,121	25.3	185	44.9
Cities 50,000–175,000	1921	*13,695*	*22.8*	*472*	*34.5*
	Annual average, 1916–20	13,736	24.3	518	37.7
Albany	1921	2,352	20.4	63	26.8
	Annual average, 1916–20	2,245	20.1	79	35.2
Yonkers	1921	2,530	24.5	88	34.8
	Annual average, 1916–20	2,389	24.6	80	33.5
Utica	1921	2,524	25.5	99	39.2
	Annual average, 1916–20	2,451	27.7	99	40.4
Schenectady	1921	1,841	20.1	71	38.6
	Annual average, 1916–20	2,145	24.9	79	36.8
Troy	1921	1,435	20.2	58	40.4
	Annual average, 1916–20	1,387	19.0	65	46.9
Binghamton	1921	1,513	22.5	39	25.8
	Annual average, 1916–20	1,555	25.7	62	39.9
Niagara Falls	1921	1,500	28.0	54	36.0
	Annual average, 1916–20	1,564	32.6	54	34.5
Cities 20,000–50,000	1921	*11,785*	*22.6*	*464*	*39.4*
	Annual average, 1916–20	11,366	22.8	458	40.3
Elmira	1921	1,120	24.4	40	35.7
	Annual average, 1916–20	1,085	25.2	46	42.4
Mt. Vernon	1921	1,034	23.3	44	42.6
	Annual average, 1916–20	895	21.8	32	35.8
Jamestown	1921	866	22.0	40	46.2
	Annual average, 1916–20	808	21.0	29	35.9
New Rochelle	1921	737	19.6	35	47.5
	Annual average, 1916–20	691	19.9	31	44.9
Auburn	1921	808	22.6	26	32.2
	Annual average, 1916–20	802	23.5	31	38.7
Poughkeepsie	1921	736	20.6	27	36.7
	Annual average, 1916–20	783	22.9	40	51.1
Amsterdam	1921	821	24.7	21	25.6
	Annual average, 1916–20	912	27.0	26	28.5
Watertown	1921	800	24.4	43	53.8
	Annual average, 1916–20	737	24.7	32	43.4
Newburgh	1921	614	19.7	28	45.6
	Annual average, 1916–20	605	20.5	22	36.4
Kingston	1921	565	21.1	19	33.6
	Annual average, 1916–20	466	17.5	20	42.9
Rome	1921	702	27.9	32	45.6
	Annual average, 1916–20	712	30.2	36	50.6
Oswego	1921	562	24.4	14	24.9
	Annual average, 1916–20	537	22.2	19	35.4
Cohoes	1921	464	20.3	14	30.2
	Annual average, 1916–20	510	22.0	19	37.3

N. B.— Totals for State (exclusive of New York City) include population, births and deaths in for 1921 (except those for Lackawanna) exclude institutional districts; while figures and rates for births and 23 deaths under 1 year of age in the Institutional districts outside of Lackawanna.

tillbirths) and birth rates, stillbirths and stillbirth rates, deaths (exclusive of stillbirths)
ages having a population of 7,000 or more: **1921** *and annual average for five year*

ATHS AND INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) AT AGE OF —											
UNDER 1 YEAR		UNDER 1 DAY		1–6 DAYS, INCLUSIVE		1 WEEK AND UNDER 1 MONTH		1 MONTH AND UNDER 3 MONTHS		3 MONTHS AND UNDER 1 YEAR	
tal	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
522	80.4	1,982	18.7	1,563	14.7	1,154	10.9	1,235	11.7	2,588	24.4
599	93.6	1,947	19.0	1,459	14.2	1,321	12.9	1,461	14.3	3,414	33.3
289	84.8	1,191	19.1	999	16.0	686	11.0	720	11.5	1,693	27.2
144	101.1	1,179	19.4	911	15.0	828	13.6	931	15.3	2,298	37.8
210	73.7	782	18.0	558	12.8	466	10.7	513	11.8	891	20.5
455	82.7	768	18.4	548	13.1	493	11.8	530	12.7	1,116	26.7
142	*87.8*	*454*	*18.6*	*399*	*16.3*	*287*	*11.8*	*296*	*12.1*	*706*	*28.9*
466	102.0	461	19.1	342	14.1	341	14.1	366	15.1	957	39.6
241	93.8	273	20.6	220	16.6	159	12.0	168	12.7	421	31.8
472	110.6	274	20.6	189	14.2	198	14.9	222	16.7	589	44.3
546	80.0	109	16.0	116	17.0	78	11.4	70	10.3	173	25.4
568	84.1	117	17.3	96	14.2	80	11.8	71	10.5	204	30.2
355	81.5	72	16.5	63	14.5	50	11.5	58	13.3	112	25.7
426	103.4	70	17.0	57	13.8	63	15.3	73	17.7	164	39.8
081	*79.0*	*238*	*17.4*	*207*	*15.1*	*129*	*9.4*	*134*	*9.6*	*376*	*27.5*
369	99.7	251	18.3	210	15.3	177	12.9	199	14.5	534	38.9
182	77.4	52	22.1	39	16.6	20	8.5	14	6.0	57	24.2
212	94.4	45	20.0	37	16.5	24	10.7	29	12.9	77	34.3
160	63.2	27	10.7	38	15.0	28	11.1	19	7.5	48	19.0
213	89.2	35	14.7	33	13.8	28	11.7	32	13.4	85	35.6
223	88.4	46	18.2	31	12.3	29	11.5	29	11.5	88	34.9
247	100.8	39	15.9	37	15.1	34	13.9	34	13.9	104	42.4
118	64.1	33	17.9	28	15.2	13	7.1	11	6.0	33	17.9
191	89.0	38	17.7	34	15.9	29	13.5	27	12.6	63	29.4
134	93.4	34	23.7	20	13.9	9	6.3	20	13.9	51	35.5
167	120.4	32	23.1	25	18.0	17	12.3	28	20.2	65	46.9
124	82.0	27	17.8	20	13.2	10	6.6	19	12.6	48	31.7
162	164.2	33	21.2	21	13.5	23	14.8	23	14.8	63	40.5
141	94.0	19	12.7	31	20.7	20	13.3	20	13.3	51	34.0
177	113.2	29	18.5	23	14.7	22	14.1	26	16.6	77	49.2
909	*77.1*	*220*	*18.7*	*190*	*16.1*	*122*	*10.4*	*125*	*10.6*	*252*	*21.4*
048	92.2	216	19.0	182	16.0	148	13.0	148	13.0	359	31.6
73	65.2	24	21.4	10	8.9	7	6.3	10	8.9	22	19.6
91	83.9	22	20.3	16	14.7	14	12.9	11	10.1	28	25.8
65	62.9	11	10.6	16	15.5	11	10.6	7	6.8	20	19.3
64	71.5	13	14.5	13	14.5	9	10.1	8	8.9	21	23.5
62	71.6	21	24.2	13	15.0	9	10.4	9	10.4	10	11.5
68	84.2	15	18.6	14	17.3	11	13.6	8	9.9	21	26.0
45	61.1	9	12.2	9	12.2	7	9.5	7	9.5	13	17.6
56	81.0	12	17.4	10	14.5	8	11.6	7	10.1	19	27.5
59	73.0	17	21.0	18	22.3	5	6.2	8	9.9	11	13.6
75	93.5	11	13.7	13	16.2	12	15.0	12	15.0	27	33.7
51	69.3	6	8.2	10	13.6	6	8.2	12	16.3	17	23.1
78	99.6	15	19.2	12	15.3	12	15.3	10	12.8	28	35.8
70	85.3	19	23.1	14	17.1	13	15.8	9	11.0	15	18.3
85	93.2	18	19.7	15	16.4	10	11.0	11	12.1	35	38.4
89	111.3	20	25.0	20	25.0	9	11.3	11	13.8	29	36.3
85	115.3	17	23.1	16	21.7	10	13.6	14	19.0	28	38.0
47	76.5	11	17.9	9	14.7	7	11.4	4	6.5	16	26.1
59	97.5	11	18.2	11	18.2	9	14.9	9	14.9	19	31.4
42	74.3	10	17.7	11	19.5	10	17.7	5	8.8	6	10.6
46	98.7	13	27.9	9	19.3	6	12.9	4	8.6	14	30.0
50	71.2	8	11.4	9	12.8	7	10.0	10	14.2	16	22.8
66	92.7	9	12.6	9	12.6	9	12.6	12	16.9	27	37.9
59	105.0	17	30.2	10	17.8	3	5.3	8	14.2	21	37.4
51	95.0	12	22.3	6	11.2	7	13.0	8	14.9	19	35.4
48	103.4	9	19.4	7	15.1	5	10.8	9	19.4	18	38.8
63	123.5	10	19.6	8	15.7	10	19.6	10	19.6	25	49.0

institutional districts for 1921 and for annual average 1916–20. All other figures and rates
nual average 1916–20 include institutional districts. However, in 1921 there were only 85

Table 31 (A) — STATE OF NEW YORK (exclusive of New York City): *Births and infant mortality rates for certain subdivisions of the first year of life, year period* **1916–1920** — (Continued)

CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		BIRTHS (EXCLUSIVE OF STILLBIRTHS) Total	Per 1,000 population
Cities 20,000–50,000 — (Continued)			
Gloversville	1921	466	20.8
	Annual average, 1916–20	**438**	**20.1**
Lockport	1921	441	19.9
	Annual average, 1916–20	**395**	**19.3**
White Plains	1921	455	21.1
	Annual average, 1916–29	**456**	**22.3**
Olean	1921	594	27.8
	Annual average, 1916–20	**534**	**27.2**
Cities and Villages 10,000=20,000	1921	*10,335*	*25.3*
	Annual average, 1916–20	**9,703**	**24.7**
Dunkirk	1921	504	25.4
	Annual average, 1916–20	**580**	**30.8**
Lackawanna *	1921	915	49.9
	Annual average, 1916–20	**858**	**50.3**
Ithaca	1921	416	24.3
	Annual average, 1916–20	**347**	**20.5**
Port Chester	1921	575	33.7
	Annual average, 1916–20	**537**	**33.4**
Glens Falls	1921	375	22.4
	Annual average, 1916–20	**336**	**20.3**
Corning	1921	431	26.0
	Annual average, 1916–20	**372**	**24.7**
Watervliet	1921	282	17.2
	Annual average, 1916–20	**293**	**18.6**
Middletown	1921	352	21.8
	Annual average, 1916–20	**295**	**18.1**
North Tonawanda	1921	376	23.3
	Annual average, 1916–20	**428**	**28.9**
Peekskill	1921	306	19.1
	Annual average, 1916–20	**301**	**19.1**
Hornell	1921	314	20.6
	Annual average, 1916–20	**298**	**20.1**
Geneva	1921	394	26.1
	Annual average, 1916–20	**366**	**25.8**
Fulton	1921	309	22.6
	Annual average, 1916–20	**309**	**24.9**
Batavia	1921	384	28.2
	Annual average, 1916–20	**337**	**25.0**
Cortland	1921	334	24.6
	Annual average, 1916–20	**287**	**22.1**
Little Falls	1921	381	29.2
	Annual average, 1916–20	**404**	**31.0**
Saratoga Springs	1921	275	21.2
	Annual average, 1916–20	**262**	**19.6**
Oneonta	1921	236	19.8
	Annual average, 1916–20	**235**	**20.9**
Ogdensburg	1921	404	34.5
	Annual average, 1916–20	**328**	**25.2**
Hudson	1921	327	28.8
	Annual average, 1916–20	**322**	**28.1**
Plattsburg	1921	311	27.9
	Annual average, 1916–20	**257**	**24.1**
Johnstown	1921	156	14.2
	Annual average, 1916–20	**175**	**16.1**
Oneida	1921	292	26.8
	Annual average, 1916–20	**235**	**23.1**
Endicott	1921	341	31.6
	Annual average, 1916–20	**282**	**34.3**

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* Lackawanna includes Our Lady of Victory Infant Home where 261 births and

N. B.— Totals for State (exclusive of New York City) include population, births and for 1921 (except those for Lackawanna) exclude institutional districts; while figures an births and 23 deaths under 1 year of age in the institutional districts outside of Lackawa *of stillbirths) and birth rates, stillbirths and stillbirth rates, deaths (exclusive of stillbirths) and villages having a population of 7,000 or more: 1921 and annual average for five*

DEATHS AND INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) AT AGE OF—											
UNDER 1 YEAR		UNDER 1 DAY		1–6 DAYS, INCLUSIVE		1 WEEK AND UNDER 1 MONTH		1 MONTH AND UNDER 3 MONTHS		3 MONTHS AND UNDER 1 YEAR	
Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
29	62.2	7	15.0	6	12.9	4	8.6	3	6.4	9	19.3
46	105.0	11	25.1	8	18.3	6	13.7	6	13.7	14	32.0
41	93.0	6	13.6	11	24.9	11	24.9	3	6.8	10	22.7
37	93.7	7	17.7	7	17.7	5	12.7	6	15.2	13	32.9
32	70.3	13	28.6	7	15.4	3	6.6	4	8.8	5	11.0
32	70.2	9	19.7	5	11.0	5	11.0	4	8.8	9	19.7
47	79.1	12	20.2	10	16.8	5	8.4	6	10.1	14	23.6
46	86.1	11	20.6	10	18.7	5	9.4	8	15.0	12	22.5
979	*94.7*	*233*	*22.5*	*165*	*16.0*	*120*	*11.6*	*151*	*15.6*	*310*	*30.0*
1,114	114.8	216	22.3	152	15.7	142	14.6	198	20.4	402	41.4
42	83.3	11	21.8	8	15.9	5	9.9	2	4.0	16	31.7
59	101.7	16	27.6	9	15.5	6	10.3	9	15.5	19	32.8
236	257.9	31	33.9	16	17.5	19	20.8	71	77.6	99	108.2
253	294.9	18	21.0	11	12.8	32	37.3	77	89.7	116	135.2
28	67.3	11	26.4	8	19.2	2	4.8	......	......	7	16.8
26	74.9	5	14.4	7	20.2	3	8.6	4	11.5	6	17.3
22	38.3	5	8.7	7	12.2	2	3.5	......	......	8	13.9
41	76.4	9	16.8	8	14.9	7	13.0	3	5.6	14	26.1
33	88.0	11	29.3	5	13.3	6	16.0	6	16.0	5	13.3
30	89.3	6	17.9	5	14.9	5	14.9	5	14.9	9	26.8
24	55.7	7	16.2	......	......	4	9.3	4	9.3	9	20.9
33	88.7	10	26.9	5	13.4	4	10.8	4	10.8	9	24.2
24	85.1	5	17.7	3	10.6	7	24.8	......	......	9	31.9
33	112.6	6	20.5	4	13.7	5	17.1	3	10.2	15	51.2
33	93.8	9	25.6	5	14.2	3	8.5	4	11.4	12	34.1
23	78.0	5	16.9	3	10.2	3	10.2	3	10.2	8	27.1
34	90.4	11	29.3	6	16.0	8	21.3	1	2.7	8	21.3
47	109.8	8	18.7	6	14.0	5	11.7	9	21.0	19	44.4
22	71.9	2	6.5	5	16.3	7	22.9	4	13.1	4	13.1
26	86.4	7	23.3	4	13.3	3	10.0	3	10.0	8	26.6
29	92.4	9	28.7	6	19.1	3	9.6	4	12.7	7	22.3
22	73.8	5	16.8	4	13.4	3	10.1	2	6.7	7	23.5
35	88.8	12	30.5	9	22.8	3	7.6	5	12.7	6	15.2
37	101.1	9	24.6	5	13.7	4	10.9	4	10.9	15	41.0
22	71.2	6	19.4	1	3.2	4	12.9	3	9.7	8	25.9
33	106.8	7	22.7	6	19.4	5	16.2	5	16.2	11	35.6
42	109.4	13	33.9	13	33.9	5	13.0	2	5.2	9	23.4
33	97.9	8	23.7	5	14.8	4	11.9	6	17.8	10	29.7
22	65.9	7	21.0	3	9.0	3	9.0	2	6.0	7	21.0
27	94.1	8	27.9	3	10.5	4	13.9	4	13.9	9	31.4
27	70.9	6	15.7	5	13.1	6	15.7	6	15.7	4	10.5
40	99.0	6	14.9	9	22.3	5	12.4	4	9.9	16	39.6
15	54.5	3	10.9	2	7.3	3	10.9	2	7.3	5	18.2
24	91.6	6	22.9	4	15.3	3	11.5	5	19.1	6	22.9
18	76.3	6	25.4	3	12.7	3	12.7	1	4.2	5	21.2
20	85.1	6	25.5	3	12.8	2	8.5	4	17.0	6	25.5
60	148.5	18	44.6	14	34.7	1	2.5	8	19.8	19	47.0
53	161.6	17	51.8	10	30.5	7	21.3	5	15.2	14	42.7
20	61.2	8	24.5	5	15.3	3	9.2	2	6.1	2	6.1
35	108.7	9	28.0	7	21.7	5	15.5	5	15.5	9	28.0
33	106.1	10	32.2	5	16.1	4	12.9	2	6.4	12	38.6
32	124.5	8	31.1	7	27.2	4	15.6	4	15.6	9	35.0
10	64.1	3	19.2	......	......	2	12.8	1	6.4	4	25.6
15	85.7	2	11.4	3	17.1	3	17.1	2	11.4	6	34.3
17	58.2	5	17.1	2	6.8	1	3.4	3	10.3	6	20.5
19	80.9	3	12.8	3	12.8	3	12.8	3	12.8	6	25.5
33	96.8	4	11.7	12	35.2	5	14.7	5	14.7	7	20.5
28	99.3	4	14.2	4	14.2	3	10.6	4	14.2	12	42.6

occurred during 1921.
the institutional districts for 1921 and for annual average 1916–20. All other figures and rates annual average 1916–20 include institutional districts. However, in 1921 there were only 85

Table 31 (A) — STATE OF NEW YORK (exclusive of New York City): *Births and infant mortality rates for certain subdivisions of the first year of life,* *year period* **1916–1920 — (Continued)**

CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		BIRTHS (EXCLUSIVE OF STILLBIRTHS)		STI
		Total	Per 1,000 population	Tota
Cities and Villages 10,000–20,000— (Continued)				
Herkimer	1921	272	25.3	
	Annual average, 1916–20	**285**	**28.0**	
Rensselaer	1921	158	14.8	
	Annual average, 1916–20	**130**	**11.9**	
Ilion	1921	208	19.7	
	Annual average, 1916–20	**209**	**21.4**	
Port Jervis	1921	264	25.3	
	Annual average, 1916–20	**218**	**22.0**	
Tonawanda	1921	244	23.5	
	Annual average, 1916–20	**202**	**20.7**	
Beacon	1921	199	19.8	
	Annual average, 1916–20	**215**	**21.3**	
Cities and Villages	1921	*2,122*	*27.2*	
7,000–10,000	**Annual average, 1916–20**	**1,778**	**23.9**	
Johnson City	1921	426	44.2	
	Annual average, 1916–20	**234**	**31.0**	
Salamanca	1921	241	25.2	
	Annual average, 1916–20	**194**	**21.6**	
Ossining	1921	270	28.6	
	Annual average, 1916–20	**214**	**21.7**	
Freeport	1921	134	14.9	
	Annual average, 1916–20	**128**	**15.6**	
Glen Cove *	1921	244	27.3	
	Annual average, 1916–20	**249**	**29.7**	
Norwich	1921	184	22.3	
	Annual average, 1916–20	**173**	**20.9**	
Mechanicville	1921	174	21.3	
	Annual average, 1916–20	**208**	**25.4**	
Malone	1921	207	27.2	
	Annual average, 1916–20	**171**	**22.8**	
Canandaigua	1921	242	33.1	
	Annual average, 1916–20	**207**	**28.0**	

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* Not a city until 1918 — formerly a part of the Town of Oyster Bay — rates refer

N. B.— Totals for State (exclusive of New York City) include population, births an for 1921 (except those for Lackawanna) exclude institutional districts; while figures an births and 23 deaths under 1 year of age in the institutional districts outside of Lackaw *of stillbirths) and birth rates stillbirths and stillbirth rates, deaths (exclusive of stillbirths) and villages having a population of 7,000 or more: 1921 and annual average for five*

DEATHS AND INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) AT AGE OF —											
UNDER 1 YEAR		UNDER 1 DAY		1-6 DAYS, INCLUSIVE		1 WEEK AND UNDER 1 MONTH		1 MONTH AND UNDER 3 MONTHS		3 MONTHS AND UNDER 1 YEAR	
Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
20	73.5	6	22.1	4	14.7	1	3.7	3	11.0	6	22.1
26	91.2	6	21.1	3	10.5	3	10.5	4	14.0	10	35.1
16	101.3	1	6.3	5	31.6	....	....	1	6.3	9	57.0
15	115.4	3	23.1	1	7.7	1	7.7	3	23.1	7	53.8
8	38.5	1	4.8	4	19.2	1	4.8	....	....	2	9.6
15	71.8	4	19.1	4	19.1	2	9.6	1	4.8	4	19.1
30	113.6	7	26.5	4	15.2	3	11.4	6	22.7	10	37.9
27	123.9	7	32.1	3	13.8	3	13.8	5	22.9	8	36.7
9	36.9	3	12.3	1	4.1	4	16.4	....	....	1	4.1
19	94.1	4	19.8	2	9.9	2	9.9	4	19.8	7	34.7
15	75.4	2	10.1	4	20.1	2	10.1	3	15.1	4	20.1
23	107.0	4	18.6	4	18.6	3	14.0	4	18.6	7	32.6
177	*83.4*	*46*	*21.7*	*38*	*17.9*	*28*	*13.2*	*16*	*7.5*	*49*	*23.1*
147	82.7	35	19.7	25	14.1	20	11.2	20	11.2	46	25.9
35	82.2	11	25.8	11	25.8	6	14.1	4	9.4	3	7.0
17	72.6	4	17.1	2	8.5	3	12.8	2	8.5	7	29.9
22	91.3	5	20.7	4	16.6	5	20.7	2	8.3	6	24.9
18	92.8	6	30.9	4	20.6	2	10.3	2	10.3	4	20.6
19	70.4	9	33.3	5	18.5	1	3.7	1	3.7	3	11.1
15	70.1	3	14.0	3	14.0	2	9.3	2	9.3	5	23.4
9	67.2	1	7.5	....	....	3	22.4	1	7.5	4	29.9
12	93.8	2	15.6	2	15.6	2	15.6	2	15.6	4	31.3
13	53.3	1	4.1	2	8.2	4	16.4	2	8.2	4	16.4
18	72.3	2	8.0	3	12.0	2	8.0	3	12.0	7	28.1
14	76.1	3	16.3	2	10.9	2	10.9	2	10.9	5	27.2
17	98.3	4	23.1	3	17.3	4	23.1	1	5.8	4	23.1
12	69.0	3	17.2	1	5.7	1	5.7	1	5.7	6	34.5
17	81.7	6	28.8	2	9.6	2	9.6	2	9.6	5	24.0
29	140.1	6	29.0	8	38.6	2	9.7	2	9.7	11	53.1
20	117.0	4	23.4	3	17.5	2	11.7	4	23.4	7	40.9
24	99.2	7	28.9	5	20.7	4	16.5	1	4.1	7	28.9
13	62.8	4	19.3	3	14.5	1	4.8	2	9.7	3	14.5

3 years.— 1918-20.
the institutional districts for 1921 and for annual average 1916-20. All other figures and rates annual average 1916-20 include Institutional Districts. However, in 1921 there were only 85

Table 31 (B) — STATE OF NEW YORK (exclusive of New York City): *Dea*
having a population of 7,000 *or more:*

CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		D
		COMMU DIS
		1-
		Total
New York State (exclusive of New York City)	1921	415
	Annual average, 1916–20	610
Cities and Villages over 7,000	1921	234
	Annual average, 1916–20	370
Rest of State	1921	181
	Annual average, 1916–20	240
Cities over 175,000	1921	*113*
	Annual average, 1916–20	129
Buffalo	1921	65
	Annual average, 1916–20	74
Rochester	1921	26
	Annual average, 1916–20	30
Syracuse	1921	22
	Annual average, 1916–20	25
Cities 50,000–175,000	1921	*50*
	Annual average, 1916–20	78
Albany	1921	4
	Annual average, 1916–20	11
Yonkers	1921	4
	Annual average, 1916–20	10
Utica	1921	12
	Annual average, 1916–20	14
Schenectady	1921	6
	Annual average, 1916–20	9
Troy	1921	10
	Annual average, 1916–20	9
Binghamton	1921	6
	Annual average, 1916–20	13
Niagara Falls	1921	8
	Annual average, 1916–20	12
Cities 20,000–50,000	1921	*24*
	Annual average, 1916–20	71
Elmira	1921	2
	Annual average, 1916–20	4
Mt. Vernon	1921	4
	Annual average, 1916–20	5
Jamestown	1921	3
	Annual average, 1916–20	5
New Rochelle	1921	1
	Annual average, 1916–20	4
Auburn	1921	......
	Annual average, 1916–20	7
Poughkeepsie	1921	1
	Annual average, 1916–20	5
Amsterdam	1921	......
	Annual average, 1916–20	5
Watertown	1921	8
	Annual average, 1916–20	8
Newburgh	1921	2
	Annual average, 1916–20	2
Kingston	1921	......
	Annual average, 1916–20	3
Rome	1921	1
	Annual average, 1916–20	5
Oswego	1921	......
	Annual average, 1916–20	4
Cohoes	1921	2
	Annual average, 1916–20	4
Gloversville	1921	......
	Annual average, 1916–20	3
Lockport	1921	3
	Annual average, 1916–20	3

1 year of age and infant mortality rates, from important causes, in cities and villages annual average for five year period **1916–1920 — (Continued)**

INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) FROM—

RESPIRATORY DISEASES 31, 37c, 97–107		GASTRO-INTESTINAL DISEASES 112–113		PREMATURE BIRTH 161a		CONGENITAL DEBILITY, MALFORMATIONS, INJURIES AT BIRTH, ETC., 159–160, 161b, 162, 163		ALL OTHER CAUSES	
Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
964	9.1	1,771	16.7	2,185	20.6	2,157	20.4	1,030	9.7
1,475	14.4	2,092	20.4	2,210	21.6	2,112	20.6	1,099	10.7
590	9.5	1,170	18.8	1,351	21.7	1,284	20.6	660	10.6
957	15.7	1,458	24.0	1,387	22.8	1,265	20.8	709	11.7
371	8.5	598	13.7	827	19.0	867	19.9	366	8.4
518	12.4	634	15.2	823	19.7	847	20.3	390	9.3
232	*9.5*	*575*	*23.6*	*513*	*21.0*	*500*	*20.5*	*209*	*8.6*
374	15.5	700	28.9	562	23.2	341	17.8	271	11.2
126	9.5	345	26.1	296	22.4	292	21.1	117	8.8
223	16.8	449	33.7	310	23.3	253	19.0	163	12.2
65	9.5	143	21.0	144	21.1	117	17.2	51	7.5
84	12.4	140	20.7	159	23.5	97	14.4	58	8.6
41	9.4	87	20.0	73	16.8	91	20.9	41	9.4
67	16.3	111	26.9	93	22.6	81	19.7	50	12.1
143	*10.4*	*223*	*16.3*	*279*	*20.4*	*232*	*16.9*	*155*	*11.3*
228	16.6	303	22.1	298	21.7	296	21.5	164	11.9
26	11.1	31	13.2	45	19.1	51	21.7	25	10.6
34	15.1	30	13.4	50	22.3	56	24.9	30	13.4
22	8.7	31	12.3	45	17.8	34	13.4	24	9.5
37	15.5	59	24.7	43	18.0	41	17.2	23	9.6
36	14.3	48	19.0	54	21.4	39	15.5	34	13.5
52	21.2	49	20.0	47	19.2	50	20.4	35	14.3
18	9.8	5	2.7	42	22.8	30	16.3	17	9.2
20	9.3	47	21.9	49	22.8	43	20.0	22	10.3
12	8.4	27	18.8	33	23.0	31	21.6	21	14.6
38	27.4	26	18.7	35	25.2	40	28.8	20	14.4
13	8.6	30	19.8	32	21.2	24	15.9	19	12.6
21	13.5	37	23.8	36	23.2	37	23.8	17	10.9
16	10.7	51	34.0	28	18.7	23	16.3	15	10.0
26	16.6	55	35.2	38	24.3	29	18.5	17	10.9
87	*7.4*	*182*	*15.4*	*264*	*22.4*	*227*	*19.3*	*125*	*10.6*
164	14.4	191	16.8	260	22.9	247	21.7	116	10.2
7	6.3	13	11.6	22	19.6	17	15.2	12	10.7
15	13.8	13	12.0	25	23.0	22	20.3	12	11.1
12	11.6	11	10.6	17	16.4	16	15.5	5	4.8
11	12.3	9	10.1	17	19.0	14	15.6	8	8.9
6	6.9	7	8.1	23	26.6	18	20.8	5	5.8
13	16.1	8	9.9	16	19.8	19	23.5	7	8.7
6	8.1	8	10.9	15	20.4	11	14.9	4	5.4
9	13.0	6	8.7	16	23.2	12	17.4	8	11.6
5	6.2	14	17.3	16	19.8	19	23.5	5	6.2
10	12.5	16	20.0	19	23.7	17	21.2	8	10.0
6	8.2	10	13.6	10	13.6	9	12.2	15	20.4
14	17.9	12	15.3	21	26.8	17	21.7	10	12.8
7	8.5	15	18.3	20	24.4	19	23.1	9	11.0
12	13.2	21	23.0	17	18.6	22	24.1	8	8.8
4	5.0	16	20.0	22	27.5	24	30.1	20	25.0
10	13.6	14	19.0	22	29.9	20	27.1	11	14.9
4	6.5	7	11.4	17	27.7	11	17.9	6	9.8
8	13.2	14	23.1	15	24.8	12	19.8	7	11.6
4	7.1	7	12.4	17	30.1	8	14.2	6	10.6
6	12.9	7	15.0	15	32.2	11	23.6	5	10.7
5	7.1	15	21.4	17	24.2	8	11.4	4	5.7
13	18.3	16	22.5	10	14.0	15	21.1	6	8.4
4	7.1	9	16.0	17	30.2	22	39.1	7	12.5
6	11.2	11	20.5	10	18.6	16	29.8	4	7.4
7	15.1	15	32.3	6	12.9	13	28.0	5	10.8
12	23.5	19	37.3	13	25.5	10	19.6	5	9.8
1	2.1	9	19.3	9	19.3	4	8.6	6	12.9
6	13.7	8	18.3	13	29.7	11	25.1	5	11.4
3	6.8	12	27.2	3	6.8	17	38.5	3	6.8
5	12.7	8	20.3	8	20.3	10	25.3	4	10.1

Table 31 (B) — STATE OF NEW YORK (exclusive of New York City): *Deat*
having a population of 7,000 or more: 1

CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		DE
		COMMU DISE
		1-
		Total
Cities 20,000–50,000 —(Continued)		
White Plains	1921	.....
	Annual average, 1916–20	1
Olean	1921	2
	Annual average, 1916–20	3
Cities and Villages, 10,000–20,000	1921	42
	Annual average, 1916–20	81
Dunkirk	1921	3
	Annual average, 1916–20	5
Lackawanna[1]	1921	15
	Annual average, 1916–20	25
Ithaca	1921	.....
	Annual average, 1916–20	2
Port Chester	1921	1
	Annual average, 1916–20	4
Glens Falls		.....
	Annual average, 1916–20	1
Corning	1921	2
	Annual average, 1916–20	3
Watervliet	1921	1
	Annual average, 1916–20	2
Middletown	1921	2
	Annual average, 1916–20	2
North Tonawanda	1921	1
	Annual average, 1916–20	4
Peekskill	1921	3
	Annual average, 1916–20	1
Hornell	1921	.....
	Annual average, 1916–20	1
Geneva	1921	1
	Annual average, 1916–20	3
Fulton	1921	.....
	Annual average, 1916–20	4
Batavia	1921	1
	Annual average, 1916–20	2
Cortland	1921	.....
	Annual average, 1916–20	2
Little Falls	1921	.....
	Annual average, 1916–20	1
Saratoga Springs	1921	.....
	Annual average, 1916–20	1
Oneonta	1921	1
	Annual average, 1916–20	1
Ogdensburg	1921	3
	Annual average, 1916–20	3
Hudson	1921	.....
	Annual average, 1916–20	1
Plattsburg	1921	2
	Annual average, 1916–20	2
Johnstown	1921	2
	Annual average, 1916–20	1
Oneida	1921	.....
	Annual average, 1916–20	1
Endicott	1921	1
	Annual average, 1916–20	3
Herkimer	1921	.....
	Annual average, 1916–20	1
Rensselaer	1921	.....
	Annual average, 1916–20	1
Ilion	1921	.....
	Annual average, 1916–20	.....

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[1] Includes Our Lady of Victory Infant Home.

ear of age and infant mortality rates, from important causes, in cities and villages
ual average for five year period **1916–1920 — (Continued)**

ANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) FROM—

RESPIRATORY DISEASES 31, 37c, 97–107		GASTRO-INTESTINAL DISEASES 112–113		PREMATURE BIRTH 161a		CONGENITAL DEBILITY, MALFORMATIONS, INJURIES AT BIRTH, ETC., 159–160, 161b, 162, 163		ALL OTHER CAUSES	
otal	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
2	4.4	2	4.4	18	39.6	4	8.8	6	13.2
5	11.0	4	8.8	8	17.5	9	19.7	4	8.8
4	6.7	12	20.2	15	25.3	7	11.8	7	11.8
9	16.9	5	9.4	15	28.1	10	18.7	4	7.5
108	*10.4*	*170*	*16.4*	*251*	*24.3*	*261*	*25.3*	*147*	*14.2*
168	17.3	241	24.8	232	23.9	256	26.4	140	14.4
8	15.9	6	11.9	12	23.8	10	19.8	3	6.0
7	12.1	13	22.4	13	22.4	16	27.6	5	8.6
33	36.1	58	63.4	34	37.2	33	36.1	63	68.9
42	49.0	79	92.1	19	22.1	38	44.3	49	57.1
.....	......	5	12.0	11	26.4	7	16.8	5	12.0
2	5.8	3	8.6	7	20.2	10	28.8	2	5.8
2	3.5	4	7.0	9	15.7	5	8.7	1	1.7
6	11.2	5	9.3	10	18.6	10	18.6	6	11.2
4	10.7	3	8.0	15	40.0	7	18.7	4	10.7
5	14.9	4	11.9	9	26.8	8	23.8	4	11.9
1	2.3	5	11.6	6	13.9	6	13.9	4	9.3
4	10.8	4	10.8	10	26.9	9	24.2	3	8.1
2	7.1	8	28.4	5	17.7	7	24.8	1	3.5
9	30.7	5	17.1	8	27.3	6	20.5	3	10.2
.....	......	6	17.0	7	19.9	14	39.8	4	11.4
3	10.2	3	10.2	6	20.3	5	16.9	4	13.6
2	5.3	3	8.0	12	31.9	10	26.6	6	16.0
9	21.0	13	30.4	7	16.4	10	23.4	4	9.3
2	6.5	2	6.5	5	16.3	6	19.6	4	13.1
4	13.3	7	23.3	7	23.3	5	16.6	2	6.6
9	28.7	2	6.4	9	28.7	7	22.3	2	6.4
3	10.1	2	6.7	4	13.4	8	26.8	3	10.1
5	12.7	2	5.1	11	27.9	13	33.0	3	7.6
5	13.7	6	16.4	8	21.9	9	24.6	6	16.4
2	6.5	6	19.4	5	16.2	5	16.2	4	12.9
4	12.9	7	22.7	8	25.9	7	22.7	4	12.9
1	2.6	8	20.8	19	49.5	10	26.0	3	7.8
5	14.8	6	17.8	10	29.7	7	20.8	3	8.9
4	12.0	2	6.0	5	15.0	8	24.0	3	9.0
3	10.5	6	20.9	8	27.9	6	20.9	3	10.5
2	5.2	4	10.5	6	15.7	9	23.6	6	15.7
5	12.4	10	24.8	11	27.2	8	19.8	4	9.9
.....	......	5	18.2	5	18.2	3	10.9	2	7.3
5	19.1	3	11.5	6	22.9	7	26.7	2	7.6
2	8.5	2	8.5	5	21.2	5	21.2	3	12.7
2	8.5	3	12.8	7	29.8	5	21.3	2	8.5
4	9.9	10	24.8	9	22.3	31	76.7	3	7.4
8	24.4	8	24.4	10	30.5	20	61.0	4	12.2
1	3.1	4	12.2	10	30.6	5	15.3	......	....
5	15.5	8	24.8	10	31.1	9	28.0	2	6.2
3	9.6	1	3.2	13	41.8	9	28.9	5	16.1
4	15.6	5	19.5	11	42.8	8	31.1	3	11.7
1	6.4	3	19.2	1	6.4	3	19.2	......	....
2	11.4	3	17.1	3	17.1	3	17.1	2	11.4
1	3.4	3	10.3	3	10.3	4	13.7	6	20.5
2	8.5	5	21.3	6	25.5	4	17.0	2	8.5
2	5.9	3	8.8	10	29.3	14	41.1	3	8.8
4	14.2	8	28.4	5	17.7	6	21.3	2	7.1
4	14.7	1	3.7	8	29.4	5	18.4	2	7.4
6	21.1	5	17.5	5	17.5	7	24.6	3	10.5
6	38.0	2	12.7	2	12.7	4	25.3	2	12.7
3	23.1	3	23.1	1	7.7	4	30.8	3	23.1
1	4.8	1	4.8	2	9.6	3	14.4	1	4.8
2	9.6	3	14.4	4	19.1	5	23.9	1	4.8

Table 31 (B) — STATE OF NEW YORK (exclusive of New York City): *Deaths*
having a population of 7,000 *or more:* 19

CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		DEA
		COMMUNI DISEA
		1-16
		Total
Cities and Villages, 10,000–20,000— (Concluded)		
Port Jervis	1921	2
	Annual average, 1916–20	1
Tonawanda	1921	.....
	Annual average, 1916–20	1
Beacon	1921	1
	Annual average, 1916–20	2
Cities and Villages, 7,000–10,000	1921	5
	Annual average, 1916–20	11
Johnson City	1921	.....
	Annual average, 1916–20	1
Salamanca	1921	.....
	Annual average, 1916–20	1
Ossining	1921	1
	Annual average, 1916–20	2
Freeport	1921	.....
	Annual average, 1916–20	1
Glen Cove [1]	1921	.....
	Annual average, 1916–20	2
Norwich	1921	.....
	Annual average, 1916–20	.....
Mechanicville	1921	3
	Annual average, 1916–20	1
Malone	1921	.....
	Annual average, 1916–20	2
Canandaigua	1921	1
	Annual average, 1916–20	1

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[1] Not a city until 1918 — formerly a part of the town of Oyster Bay — rates refer to

1 year of age and infant mortality rates, from important causes, in cities and villages annual average for five year period **1916–1920** — (Concluded)

INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) FROM—

RESPIRATORY DISEASES 31, 37c, 97–107		GASTRO-INTESTINAL DISEASES 112–113		PREMATURE BIRTH 161a		CONGENITAL DEBILITY, MALFORMATIONS, INJURIES AT BIRTH, ETC., 159–160, 161b, 162, 163		ALL OTHER CAUSES	
Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
3	11.4	9	34.1	5	18.9	10	37.9	1	3.8
3	13.8	6	27.5	7	32.1	7	32.1	2	9.2
1	4.1	1	4.1	4	16.4	3	12.3	......	....
3	14.9	5	24.8	5	24.8	3	14.9	3	14.9
2	10.1	1	5.0	3	15.1	5	25 1	3	15.1
3	14.0	3	14.0	5	23.3	6	27.9	4	18.6
20	9.4	20	9.4	44	20.7	64	30.2	24	11.3
23	12.9	23	12.9	35	19.7	36	20.2	18	10.1
2	4.7	1	2.3	13	30.5	14	32.9	5	11.7
2	8.5	3	12.8	5	21.4	4	17.1	2	8.5
4	16.6	3	12.4	6	24.9	6	24.9	3	12.4
2	10.3	3	15.5	6	30.9	5	25.8	1	5.2
3	11.1	1	3.7	4	14.8	8	29.6	2	7.4
3	14.0	2	9.3	2	9.3	4	18.7	2	9.3
2	14.9	2	14.9	......	......	4	29.9	1	7.5
2	15.6	2	15.6	2	15.6	2	15.6	2	15.6
2	8.2	2	8.2	3	12.3	6	24.6	......	....
4	16.1	3	12.0	2	8.0	4	16.1	3	12.0
2	10.9	1	5.4	2	10.9	3	16.3	6	32.6
2	11.6	2	11.6	6	34.7	4	23.1	2	11.6
2	11.5	1	5.7	2	11.5	3	17.2	1	5.7
3	14.4	3	14.4	4	19.2	5	24.8	2	9.6
3	14.5	6	29.0	9	43.5	9	43.5	2	9.7
3	17.5	3	17.5	5	29.2	4	23.4	2	11.7
....	......	3	12.4	5	20.7	11	45.5	4	16.5
2	9.7	2	9.7	3	14.5	3	14.5	2	9.7

three years — 1918–20.

Table 31 (C) — STATE OF NEW YORK (exclusive of New York City): *Births (exclusive rates for certain subdivisions of the first year of life, in counties, exclusive of cities and average for five year period* **1916–1920**

COUNTIES, EXCLUSIVE OF CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		BIRTHS (EXCLUSIVE OF STILLBIRTHS)		STILLBIRTHS	
		Total	Per 1,000 population	Total	Per 1,000 living births
Albany	1921	580	17.8	21	36.2
	Annual average, 1916–20	567	16.3	20	35.3
Allegany	1921	697	19.5	35	50.2
	Annual average, 1916–20	665	17.5	25	37.6
Broome	1921	550	18.6	17	30.9
	Annual average, 1916–20	521	12.0	19	36.5
Cattaraugus	1921	833	20.9	37	44.4
	Annual average, 1916–20	768	17.8	29	37.8
Cayuga	1921	460	16.6	12	26.1
	Annual average, 1916–20	449	14.8	14	31.2
Chautauqua	1921	1,166	20.9	38	32.6
	Annual average, 1916–20	1,210	20.7	36	29.8
Chemung	1921	332	15.8	12	36.1
	Annual average, 1916–20	330	16.5	12	36.4
Chenango	1921	466	17.9	25	53.6
	Annual average, 1916–20	443	16.3	18	40.6
Clinton	1921	876	29.7	34	38.8
	Annual average, 1916–20	835	25.0	31	37.1
Columbia	1921	367	14.4	15	40.9
	Annual average, 1916–20	448	15.5	16	35.7
Cortland	1921	308	19.4	12	39.0
	Annual average, 1916–20	287	17.1	11	38.3
Delaware	1921	909	21.8	27	29.7
	Annual average, 1916–20	842	19.2	21	24.9
Dutchess	1921	742	18.4	23	31.0
	Annual average, 1916–20	754	17.1	23	30.5
Erie	1921	2,109	21.0	84	39.8
	Annual average, 1916–20	1,981	20.5	63	31.8
Essex	1921	797	25.5	33	41.4
	Annual average, 1916–20	750	23.5	27	36.0
Franklin	1921	929	26.5	44	47.4
	Annual average, 1916–20	871	19.6	32	36.7
Fulton	1921	221	19.5	3	13.6
	Annual average, 1916–20	214	17.1	7	32.7
Genesee	1921	465	19.8	7	15.1
	Annual average, 1916–20	464	18.3	12	25.9
Greene	1921	486	19.9	17	35.0
	Annual average, 1916–20	451	16.6	15	33.3
Hamilton	1921	58	15.3	2	34.5
	Annual average, 1916–20	80	19.3	5	62.5
Herkimer	1921	681	22.0	21	30.8
	Annual average, 1916–20	659	12.8	21	31.9
Jefferson	1921	1,052	41.1	34	32.3
	Annual average, 1916–20	951	18.3	36	37.9
Lewis	1921	537	23.4	28	52.1
	Annual average, 1916–20	478	19.6	20	41.8
Livingston	1921	792	23.0	20	25.3
	Annual average, 1916–20	756	20.8	23	30.4
Madison	1921	577	20.7	29	50.3
	Annual average, 1916–20	548	18.2	20	36.5
Monroe	1921	1,018	18.5	32	31.4
	Annual average, 1916–20	1,198	17.6	31	25.9
Montgomery	1921	427	18.1	10	23.4
	Annual average, 1916–20	413	16.4	15	36.3
Nassau	1921	2,473	22.2	82	33.2
	Annual average, 1916–20	2,310	20.1	82	*35.5
Niagara	1921	625	20.7	16	25.6
	Annual average, 1916–20	559	17.4	18	32.2
Oneida	1921	1,153	19.6	56	48.6
	Annual average, 1916–20	1,212	19.8	41	33.8
Onondaga	1921	1,389	19.8	44	31.7
	Annual average, 1916–20	1,297	18.7	41	31.6
Ontario	1921	518	17.5	19	36.7
	Annual average, 1916–20	529	16.4	18	34.0

of still briths) and birth rates, stillbirths and stillbirth rates, deaths and infant mortality villages having a population of 7,000 *or more* (see Tables A and B): 1921 *and annual*

DEATHS AND INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) AT AGE OF —

UNDER 1 YEAR		UNDER 1 DAY		1–6 DAYS INCLUSIVE		1 WEEK AND UNDER 1 MONTH		1 MONTH AND UNDER 3 MONTHS		3 MONTHS AND UNDER 1 YEAR	
Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
49	84.5	16	27.6	4	6.9	5	8.6	10	17.2	14	24.1
52	91.7	8	14.1	8	14.1	9	15.9	9	15.9	19	33.5
37	53.1	5	7.2	4	5.7	9	12.9	6	8.6	13	18.7
48	72.2	11	16.5	10	15.0	6	9.0	8	12.0	13	19.5
33	60.0	7	12.7	9	16.4	5	9.1	6	10.9	6	10.9
44	84.5	9	17.3	6	11.5	5	9.6	7	13.4	16	30.7
62	74.4	21	25.2	10	12.0	10	12.0	4	4.8	17	20.4
61	79.4	17	22.1	10	13.0	8	10.4	9	11.7	16	20.8
30	65.2	8	17.4	6	13.0	6	13.0	5	10.9	5	10.9
31	69.0	8	17.8	5	11.1	5	11.1	6	13.4	7	15.6
75	64.3	21	18.0	4	3.4	11	9.4	15	12.9	24	20.6
73	60.3	19	15.7	11	9.1	8	6.6	12	9.9	22	18.2
27	81.3	6	18.1	4	12.0	6	18.1	3	9.0	8	24.1
30	90.9	5	15.2	5	15.2	6	18.2	6	18.2	7	21.2
29	62.2	9	19.3	6	12.9	2	4.3	7	15.0	5	10.7
28	63.2	8	18.1	4	9.0	4	9.0	4	9.0	7	15.8
98	111.9	23	26.3	16	18.3	8	9.1	15	17.1	36	41.1
92	110.2	20	24.0	15	18.0	15	18.0	14	16.8	28	33.5
22	59.9	4	10.9	3	8.2	5	13.6	3	8.2	7	19.1
36	80.4	7	15.6	5	11.2	4	8.9	6	13.4	15	33.5
10	32.5	3	9.7	4	13.0	2	6.5	.....	.....	1	3.2
22	76.7	5	17.4	3	10.5	4	13.9	3	10.5	6	20.9
61	67.1	14	15.4	11	12.1	11	12.1	9	9.9	16	17.6
62	73.6	12	14.3	12	14.3	9	10.7	13	15.4	17	20.2
61	82.2	13	17.5	16	21.6	5	6.7	10	13.5	17	22.9
67	88.9	17	22.5	11	14.6	10	13.3	9	11.9	20	26.6
189	89.6	58	27.5	25	11.9	19	9.0	33	15.6	54	25.6
180	90.9	39	19.7	23	11.6	23	11.6	23	11.6	72	36.3
68	85.3	20	25.1	15	18.8	8	10.0	7	8.8	18	22.6
77	102.7	21	28.0	8	10.7	11	14.7	12	16.0	25	33.3
91	98.0	13	14.0	16	17.2	11	11.8	16	17.2	35	37.7
90	103.3	16	18.4	15	17.2	14	16.1	15	17.2	30	34.4
19	86.0	6	27.1	4	18.1	4	18.1	.....	.....	5	22.6
17	79.4	4	18.7	2	9.3	1	4.7	4	18.7	6	28.0
45	96.8	12	25.8	7	15.1	9	19.4	5	10.8	12	25.8
27	58.2	7	15.1	5	10.8	3	6.5	5	10.8	7	15.1
37	76.1	14	28.8	3	6.2	6	12.3	8	16.5	6	12.3
41	90.9	9	20.0	9	20.0	3	6.7	6	13.3	14	31.0
9	155.2	1	17.2	.....	.....	1	17.2	4	69.0	3	51.7
5	62.5	1	12.5	1	12.5	1	12.5	1	12.5	1	12.5
48	70.5	13	19.1	9	13.2	9	13.2	6	8.8	11	16.2
61	92.6	13	19.7	9	13.7	7	10.6	11	16.7	22	33.4
79	75.1	19	18.1	10	9.5	16	15.2	15	14.3	19	18.1
84	88.3	18	18.9	12	12.6	13	13.7	15	15.8	27	28.4
31	57.7	7	13.0	3	5.6	5	9.3	5	9.3	11	20.5
38	79.5	11	23.0	7	14.6	4	8.4	4	8.4	12	25.1
60	75.8	10	12.6	14	17.7	9	11.4	9	11.4	18	22.7
57	75.4	15	19.8	7	9.3	8	10.6	7	9.3	20	26.5
46	79.7	10	17.3	10	17.3	7	12.1	7	12.1	12	20.8
44	80.3	11	20.1	9	16.4	6	10.9	9	16.4	10	18.2
66	64.8	16	15.7	13	12.8	11	10.8	5	4.9	21	20.6
86	71.8	22	18.4	13	10.9	11	9.2	13	10.9	27	22.5
26	60.9	8	18.7	6	14.1	1	2.3	5	11.7	6	14.1
34	82.3	6	14.5	5	12.1	5	12.1	6	14.5	13	31.5
169	68.3	49	19.8	30	12.1	11	4.4	31	12.5	48	19.4
197	85.3	38	16.5	26	11.3	26	11.3	32	13.9	75	32.5
46	73.6	10	16.0	9	14.4	6	9.6	7	11.2	14	22.4
40	71.6	10	17.9	6	10.7	6	10.7	6	10.7	12	21.5
104	90.2	20	17.3	23	19.9	20	17.3	13	11.3	28	24.3
102	84.2	20	16.5	15	12.4	16	13.2	14	11.6	37	30.5
99	71.3	16	11.5	18	13.0	19	13.7	16	11.5	30	21.6
111	86.6	20	15.4	14	10.8	15	11.6	19	14.6	43	33.2
34	65.6	8	15.4	12	23.2	5	9.7	4	7.7	5	9.7
40	76.9	12	23.1	6	11.5	7	13.5	6	11.5	9	17.3

Table 31 (C) — STATE OF NEW YORK (exclusive of New York City): *Births* (
rates for certain subdivisions of the first year of life, in counties, exclusive of c
average for five year period **1916–1920** — (Continued)

COUNTIES, EXCLUSIVE OF CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		BIRTHS (EXCLUSIVE OF STILLBIRTHS)		STIL
		Total	Per 1,000 population	Total
Orange	1921	1,254	21.0	36
	Annual average, 1916–20	1,165	18.8	45
Orleans	1921	637	23.7	33
	Annual average, 1916–20	591	19.5	23
Oswego	1921	741	22.6	27
	Annual average, 1916–20	647	18.0	20
Otsego	1921	591	17.6	18
	Annual average, 1916–20	553	15.5	20
Putnam	1921	214	21.1	7
	Annual average, 1916–20	211	18.4	5
Rensselaer	1921	438	15.2	13
	Annual average, 1916–20	482	15.2	13
Rockland	1921	903	20.6	37
	Annual average, 1916–20	871	19.2	33
St. Lawrence	1921	1,633	22.5	76
	Annual average, 1916–20	1,588	21.4	83
Saratoga	1921	696	18.4	29
	Annual average, 1916–20	729	18.5	26
Schenectady	1921	379	17.7	8
	Annual average, 1916–20	364	18.3	9
Schoharie	1921	375	18.1	16
	Annual average, 1916–20	369	16.9	15
Schuyler	1921	269	21.0	7
	Annual average, 1916–20	258	19.3	10
Seneca	1921	411	19.4	13
	Annual average, 1916–20	429	18.5	17
Steuben	1921	989	21.2	39
	Annual average, 1916–20	944	18.4	34
Suffolk	1921	2,303	23.4	76
	Annual average, 1916–20	1,936	19.6	68
Sullivan	1921	591	18.8	21
	Annual average, 1916–20	560	16.1	22
Tioga	1921	482	20.3	14
	Annual average, 1916–20	395	16.0	11
Tompkins	1921	313	17.6	7
	Annual average, 1916–20	317	16.9	9
Ulster	1921	873	19.6	31
	Annual average, 1916–20	831	16.1	44
Warren	1921	291	20.1	17
	Annual average, 1916–20	283	18.2	12
Washington	1921	858	19.7	40
	Annual average, 1916–20	847	18.7	34
Wayne	1921	871	18.9	34
	Annual average, 1916–20	909	18.3	32
Westchester	1921	1,884	18.7	71
	Annual average, 1916–20	1,727	17.1	56
Wyoming	1921	663	22.5	16
	Annual average, 1916–20	588	18.8	18
Yates	1921	290	18.2	16
	Annual average, 1916–20	279	16.1	12

* Includes Glen Cove for 1916–1917, which at that time was a part of the Town

of stillbirths) and birth rates, stillbirths and stillbirth rates, deaths and infant mortality villages having a population of 7,000 *or more* (see Tables A and B): 1921 *and annual*

Deaths and Infant Mortality Rates (Deaths Under 1 Year of Age Per 1,000 Living Births) at Age of —											
UNDER 1 YEAR		UNDER 1 DAY		1–6 DAYS INCLUSIVE		1 WEEK AND UNDER 1 MONTH		1 MONTH AND UNDER 3 MONTHS		3 MONTHS AND UNDER 1 YEAR	
Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
99	78.9	25	19.9	13	10.4	18	14.4	17	13.6	26	20.7
110	94.4	25	21.5	17	14.6	14	12.0	13	11.2	40	34.3
46	72.2	9	14.1	7	11.0	7	11.0	9	14.1	14	22.0
36	60.9	10	16.9	6	10.2	5	8.5	6	10.2	9	15.2
58	78.3	11	14.8	5	6.7	12	16.2	16	21.6	14	18.9
56	86.6	12	18.5	11	17.0	8	12.4	9	13.9	16	24.7
40	67.7	15	25.4	6	10.2	3	5.1	5	8.5	11	18.6
38	63.7	12	21.7	7	12.7	5	9.0	6	10.8	7	12.7
16	74.8	3	14.0	1	4.7	6	28.0	2	9.3	4	18.7
15	71.1	3	14.2	3	14.2	2	9.5	2	9.5	5	23.7
30	68.5	6	13.7	6	13.7	5	11.4	6	13.7	7	16.0
40	83.0	8	16.6	9	18.7	5	10.4	7	14.5	11	22.8
49	54.3	7	7.8	11	12.2	7	7.8	9	10.0	15	16.6
76	87.3	16	18.4	8	9.2	11	12.6	15	17.2	26	29.9
142	87.0	34	20.8	22	13.5	13	8.0	22	13.5	51	31.2
170	107.1	37	23.3	25	15.7	28	17.6	23	14.5	58	36.5
62	89.1	18	25.9	9	12.9	10	14.4	8	11.5	17	24.4
65	89.2	15	20.6	12	16.5	6	8.2	11	15.1	21	28.8
24	63.3	8	21.1	4	10.6	4	10.6	3	7.9	5	13.2
30	82.4	3	8.2	6	16.5	5	13.7	3	8.2	12	33.0
21	56.0	3	8.0	5	13.3	3	8.0	5	13.3	5	13.3
30	81.3	7	19.0	5	13.6	5	13.6	6	16.3	7	19.0
11	40.9	4	14.9	4	14.9	.....	.....	2	7.4	1	3.7
17	65.9	5	19.4	3	11.6	2	7.8	2	7.8	4	15.5
40	97.3	7	17.0	5	12.2	7	17.0	16	38.9	5	12.2
34	79.3	8	18.6	6	14.0	4	9.3	5	11.7	12	28.0
61	61.7	13	13.1	10	10.1	10	10.1	11	11.1	17	17.2
72	76.3	16	16.9	14	14.8	13	13.8	11	11.7	17	18.0
140	60.8	39	16.9	31	13.5	23	10.0	17	7 4	30	13.0
150	75.5	37	18.6	25	12.6	20	10.1	23	11.6	46	23.2
41	69.4	4	6.8	12	20.3	6	10.2	7	11.8	12	20.3
35	62.5	8	14.3	6	10.7	7	12.5	5	8.9	10	17.9
30	62.2	7	14.5	4	8.3	7	14.5	4	8.3	8	16.6
31	78.5	7	17.7	6	15.2	5	12.7	5	12.7	9	22.8
23	73.5	7	22.4	4	12.8	2	6.4	5	16.0	5	16.0
24	75.7	5	15.8	4	12.6	3	9.5	5	15.8	7	22.1
60	68.7	10	11.5	15	17.2	13	14.9	9	10.3	13	14.9
74	89.0	15	18.1	11	13.2	12	14.4	11	13.2	25	30.1
16	55.0	6	20.6	5	17.2	2	6.9	.....	.....	3	10.3
22	77.7	7	24.7	4	14.1	2	7.1	3	10.6	5	17.7
55	64.1	8	9.3	14	16.3	14	16.3	7	8.2	12	14.0
77	90.0	15	17.7	11	13.0	12	14.2	11	13.0	27	31.9
57	65.4	11	12.6	10	11.5	11	12.6	10	11.5	15	17.2
67	73.7	15	16.5	13	14.3	13	14.3	7	7.7	20	22.0
157	83.3	45	23.9	18	9.6	14	7.4	24	12.7	56	29.7
143	82.8	26	15.1	25	14.5	21	12.2	17	9.8	53	30.7
48	72.4	19	28.7	7	10.6	3	4.5	6	9.0	13	19.6
44	74.8	11	18.7	9	15.3	8	13.6	7	11.9	9	15.3
24	82.8	3	10.3	6	20.7	4	13.8	4	13.8	7	24.1
22	78.9	6	21.5	5	17.9	4	14.3	3	10.8	5	17.9

Bay.

Table 31 (D) — STATE OF NEW YORK (exclusive of New York City): *De*
cities and villages having a population of 7,000 or more (

COUNTIES, EXCLUSIVE OF CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		COMM DI Tota
Albany	**1921**	
	Annual average, 1916–20	
Allegany	**1921**	
	Annual average, 1916–20	
Broome	**1921**	
	Annual average, 1916–20	
Cattaraugus	**1921**	
	Annual average, 1916–20	
Cayuga	**1921**	
	Annual average, 1916–20	
Chautauqua	**1921**	
	Annual average, 1916–20	
Chemung	**1921**	....
	Annual average, 1916–20	
Chenango	**1921**	....
	Annual average, 1916–20	
Clinton	**1921**	
	Annual average, 1916–20	
Columbia	**1921**	
	Annual average, 1916–20	
Cortland	**1921**	....
	Annual average, 1916–20	
Delaware	**1921**	
	Annual average, 1916–20	
Dutchess	**1921**	
	Annual average, 1916–20	
Erie	**1921**	
	Annual average, 1916–20	
Essex	**1921**	
	Annual average, 1916–20	
Franklin	**1921**	
	Annual average, 1916–20	
Fulton	**1921**	
	Annual average, 1916–20	
Genesee	**1921**	
	Annual average, 1916–20	
Greene	**1921**	
	Annual average, 1916–20	
Hamilton	**1921**	....
	Annual average, 1916–20	....
Herkimer	**1921**	
	Annual average, 1916–20	
Jefferson	**1921**	
	Annual average, 1916–20	
Lewis	**1921**	
	Annual average, 1916–20	
Livingston	**1921**	
	Annual average, 1916–20	
Madison	**1921**	
	Annual average, 1916–20	
Monroe	**1921**	
	Annual average, 1916–20	
Montgomery	**1921**	
	Annual average, 1916–20	
Nassau	**1921**	
	Annual average, 1916–20	
Niagara	**1921**	
	Annual average, 1916–20	
Oneida	**1921**	
	Annual average, 1916–20	
Onondaga	**1921**	
	Annual average, 1916–20	

year of age and infant mortality rates, from important causes, in counties, exclusive of **and B): 1921** *and annual average for five year period* **1916–1920**

NFANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) FROM —

RESPIRATORY DISEASES 31, 37c, 97–107		GASTRO-INTESTINAL DISEASES 112–113		PREMATURE BIRTH 161a		CONGENITAL, DEBILITY, MALFORMATIONS, INJURIES AT BIRTH, ETC., 159, 160 161b, 162, 163		ALL OTHER CAUSES	
Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
5	8.6	8	13.8	13	22.4	10	17.2	8	13.8
11	19.4	8	14.1	8	14.1	13	22.9	8	14.1
4	5.7	8	11.5	7	10.0	11	15.8	3	4.3
7	10.5	8	12.0	10	15.0	14	21.1	6	9.0
4	7.3	6	10.9	10	18.2	8	14.5	3	5.5
4	7.7	11	21.1	9	17.3	10	19.2	6	11.5
10	12.0	9	10.8	24	28.8	13	15.6	5	6.0
6	7.8	9	11.7	21	27.3	13	16.9	9	11.7
4	8.7	3	6.5	6	13.0	13	28.3	2	4.3
4	8.9	6	13.4	8	17.8	8	17.8	3	6.7
7	6.0	17	14.6	22	18.9	18	15.4	8	6.9
8	6.6	15	12.4	21	17.4	16	13.2	7	5.8
5	15.1	4	12.0	8	24.1	6	18.1	4	12.0
4	12.1	4	12.1	8	24.2	8	24.2	5	15.2
1	2.1	4	8.6	8	17.2	11	23.6	5	10.7
3	6.8	3	6.8	10	22.6	7	15.8	2	4.5
8	9.1	26	29.7	25	28.5	25	28.5	10	11.4
15	18.0	19	22.8	22	26.3	21	25.1	6	7.2
3	8.2	3	8.2	2	5.4	9	24.5	3	8.2
6	13.4	6	13.4	7	15.6	9	20.1	5	11.2
....	......	1	3.2	6	19.5	3	9.7	......	....
2	7.0	3	10.5	6	20.9	6	20.9	2	7.0
6	6.6	4	4.4	20	22.0	17	18.7	11	12.1
8	9.5	8	9.5	14	16.6	20	23.8	7	8.3
12	16.2	3	4.0	13	17.5	21	28.3	8	10.8
13	17.2	7	9.3	17	22.5	17	22.5	7	9.3
17	8.1	45	21.3	40	19.0	49	23.2	23	10.9
29	14.6	53	26.8	39	19.7	34	17.2	14	7.1
7	8.8	13	16.3	23	28.9	17	21.3	4	5.0
9	12.0	19	25.3	17	22.7	19	25.3	8	10.7
11	11.8	27	29.1	16	17.2	19	20.5	11	11.8
14	16.1	19	21.8	18	20.7	22	25.3	10	11.5
2	9.0	3	13.6	6	27.1	5	22.6	1	4.5
4	18.7	3	14.0	3	14.0	4	18.7	2	9.3
6	12.9	5	10.8	14	30.1	9	19.4	6	12.9
5	10.8	4	8.6	8	17.2	4	8.6	3	6.5
3	6.2	4	8.2	10	20.6	16	32.9	1	2.1
5	11.1	6	13.3	11	24.4	8	17.7	7	15.5
5	86.2	2	34.5	1	17.2	1	17.2	......	....
1	12.5	......	......	2	25.0	1	12.5	1	12.5
5	7.3	8	11.7	14	20.6	14	20.6	4	5.9
9	13.7	17	25.8	15	22.8	12	18.2	5	7.6
9	8.6	13	12.4	18	17.1	21	20.0	12	11.4
12	12.6	13	13.7	21	22.1	22	23.1	11	11.6
3	5.6	7	13.0	7	13.0	9	16.8	3	5.6
4	8.4	5	10.5	7	14.6	15	31.4	5	10.5
2	2.5	19	24.0	12	15.2	13	16.4	10	12.6
9	11.9	8	10.6	14	18.5	14	18.5	7	9.3
4	6.9	11	19.1	11	19.1	15	26.0	4	6.9
3	5.5	7	12.8	13	23.7	14	25.5	5	9.1
8	7.9	16	15.7	18	17.7	13	12.8	7	6.9
14	11.7	15	12.5	22	18.4	21	17.5	9	7.5
4	9.4	4	9.4	5	11.7	9	21.1	3	7.0
6	14.5	6	14.5	8	19.4	8	19.4	4	9.7
18	7.3	35	14.2	43	17.4	45	18.2	20	8.1
35	15.2	38	16.5	42	18.2	45	19.5	27	11.7
4	6.4	6	9.6	14	22.4	15	24.0	5	8.0
4	7.2	8	14.3	9	16.1	12	21.5	3	5.4
20	17.3	16	13.9	22	19.1	30	26.0	7	6.1
15	12.4	22	18.2	20	16.5	24	19.8	12	9.9
15	10.8	20	14.4	23	16.6	24	17.3	9	6.5
19	14.6	30	23.1	21	16.2	23	17.7	12	9.3

Table 31 (D) — STATE OF NEW YORK (exclusive of New York City): *Deaths*
cities and villages having a population of 7,000 *or more* (see Tables A ar

COUNTIES, EXCLUSIVE OF CITIES AND VILLAGES HAVING ON JULY 1, 1921 A POPULATION OVER 7,000		DEAT
		COMMUNIC DISEASI
		1–16
		Total
Ontario	1921	2
	Annual average, 1916–20	4
Orange	1921	6
	Annual average, 1916–20	8
Orleans	1921	3
	Annual average, 1916–20	1
Oswego	1921	4
	Annual average, 1916–20	4
Otsego	1921	3
	Annual average, 1916–20	1
Putnam	1921	1
	Annual average, 1916–20	1
Rensselaer	1921	2
	Annual average, 1916–20	2
Rockland	1921	3
	Annual average, 1916–20	5
St. Lawrence	1921	7
	Annual average, 1916–20	10
Saratoga	1921	4
	Annual average, 1916–20	3
Schenectady	1921	......
	Annual average, 1916–20	2
Schoharie	1921	......
	Annual average, 1916–20	3
Schuyler	1921	......
	Annual average, 1916–20	2
Seneca	1921	......
	Annual average, 1916–20	2
Steuben	1921	2
	Annual average, 1916–20	7
Suffolk	1921	7
	Annual average, 1916–20	9
Sullivan	1921	1
	Annual average, 1916–20	1
Tioga	1921	1
	Annual average, 1916–20	3
Tompkins	1921	......
	Annual average, 1916–20	3
Ulster	1921	1
	Annual average, 1916–20	6
Warren	1921	......
	Annual average, 1916–20	3
Washington	1921	1
	Annual average, 1916–20	6
Wayne	1921	4
	Annual average, 1916–20	5
Westchester	1921	13
	Annual average, 1916–20	9
Wyoming	1921	1
	Annual average, 1916–20	2
Yates	1921	1
	Annual average, 1916–20	......

1 *year of age and infant mortality rates, from important causes, in counties, exclusive of* 1921 *and annual average for five year period* 1916–1920 — (Concluded)

INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR OF AGE PER 1,000 LIVING BIRTHS) FROM —

RESPIRATORY DISEASES 31, 37c, 97–107		GASTRO-INTESTINAL DISEASES 112–113		PREMATURE BIRTH 161a		CONGENITAL DEBILITY, MALFORMATIONS, INJURIES AT BIRTH, ETC., 159–160 161b, 162, 163		ALL OTHER CAUSES	
Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate
1	1.9	5	9.7	8	15.4	15	29.0	3	5.8
4	7.7	5	9.6	13	25.0	10	19.2	5	9.6
13	10.4	14	11.2	28	22.3	26	20.7	12	9.6
19	16.3	20	17.2	25	21.5	26	22.3	12	10.3
3	4.7	12	18.8	12	18.8	12	18.8	4	6.3
4	6.8	6	10.2	11	18.6	9	15.2	5	8.5
9	12.1	15	20.2	13	17.5	14	18.9	3	4.0
7	10.8	7	10.8	15	23.2	16	24.7	6	9.3
10	16.9	3	5.1	9	15.2	12	20.3	3	5.1
4	7.2	6	10.8	13	23.5	9	16.3	5	9.0
....	......	3	14.0	4	18.7	3	14.0	5	23.4
2	9.5	2	9.5	5	23.7	4	19.0	1	4.7
5	11.4	5	11.4	10	22.8	6	13.7	2	4.6
5	10.4	6	12.4	10	20.7	13	27.0	3	6.2
5	5.5	12	13.3	11	12.2	9	10.0	9	10.0
14	16.1	16	18.4	12	13.8	19	21.8	9	10.3
11	6.7	40	24.5	32	19.6	39	23.9	13	8.0
29	18.3	32	20.2	43	27.1	38	23.9	18	11.3
7	10.1	10	14.4	14	20.1	23	33.0	4	5.7
14	19.2	13	17.8	16	21.9	13	17.8	6	8.2
2	5.3	2	5.3	9	23.7	8	21.1	3	7.9
5	13.7	7	19.2	6	16.5	6	16.5	4	11.0
4	10.7	3	8.0	4	10.7	7	18.7	3	8.0
3	8.1	4	10.8	8	21.7	10	27.1	3	8.1
....	......	......	......	3	11.2	7	26.0	1	3.7
2	7.8	2	7.8	3	11.6	6	23.3	2	7.8
....	......	8	19.5	10	24.3	15	36.5	7	17.0
4	9.3	7	16.3	8	18.6	10	23.3	4	9.3
10	10.1	11	11.1	14	14.2	18	18.2	6	6.1
7	7.4	10	10.6	20	21.2	21	22.2	7	7.4
13	5.6	11	4.8	50	21.7	37	16.1	22	9.6
23	11.6	26	13.1	36	18.1	38	19.1	18	9.1
9	15.2	7	11.8	7	11.8	13	22.0	4	6.8
7	12.5	5	8.9	9	16.1	9	16.1	4	7.1
5	10.4	6	12.4	10	20.7	6	12.4	2	4.1
3	7.6	6	15.2	6	15.2	9	22.8	4	10.1
4	12.8	6	19.2	4	12.8	5	16.0	4	12.8
2	6.3	4	12.6	5	15.8	7	22.1	2	6.3
3	3.4	13	14.9	15	17.2	14	16.0	14	16.0
12	14.4	12	14.4	15	18.1	17	20.5	11	13.2
1	3.4	3	10.3	5	17.2	5	17.2	2	6.9
2	7.1	2	7.1	8	28.3	5	17.7	2	7.1
6	7.0	10	11.7	15	17.5	12	14.0	11	12.8
14	16.5	13	15.3	20	23.6	15	17.7	8	9.4
9	10.3	7	8.0	12	13.8	19	21.8	6	6.9
9	9.9	9	9.9	16	17.6	20	22.0	8	8.8
22	11.7	29	15.4	48	25.5	27	14.3	18	9.6
26	15.1	25	14.5	32	18.5	33	19.1	17	9.8
4	6.0	8	12.1	14	21.1	18	27.1	3	4.5
6	10.2	6	10.2	11	18.7	14	23.8	4	6.8
3	10.3	5	17.2	5	17.2	8	27.6	2	6.9
3	10.8	3	10.8	6	21.5	6	21.5	4	14.3

Table 32 — STATE OF NEW YORK: *Population, births, stillbirths, deaths and marriages, with birth, death and marriage rates per 1,000 population, by counties:* 1921

AREA	Estimated population[1] July 1, 1921	Births (exclusive of stillbirths)	Stillbirths	Deaths (exclusive of stillbirths)	Marriages	RATES PER 1,000 POPULATION		
						Birth	Death	Persons marrying
NEW YORK STATE	**10,543,105**	**240,210**	**10,234**	**130,110**	**101,437**	**22.8**	**12.3**	**19.2**
New York City	**5,751,859**	**134,241**	**6,292**	**64,257**	**60,846**	**23.3**	**11.2**	**21.2**
Rest of State	**4,791,246**	**105,969**	**3,942**	**65,853**	**40,591**	**22.1**	**13.7**	**16.9**
Albany	187,014	3,678	108	2,641	1,595	19.7	14.1	17.1
Allegany	35,738	697	35	520	313	19.5	14.6	17.5
Broome	120,144	2,831	80	1,683	1,315	23.6	14.0	21.9
Cattaraugus	70,855	1,668	74	994	773	23.5	14.0	21.8
Cayuga	64,586	1,268	38	897	399	19.6	13.9	12.4
Chautauqua	114,867	2,536	97	1,463	1,619	22.1	12.7	28.2
Chemung	67,691	1,452	52	874	650	21.5	12.9	19.2
Chenango	34,387	650	38	587	281	18.9	17.1	16.3
Clinton	42,191	1,187	51	639	366	28.1	15.1	17.3
Columbia	37,121	700	27	556	364	18.9	15.0	19.6
Cortland	29,478	642	27	406	154	21.8	13.8	10.4
Delaware	41,720	909	27	622	364	21.8	14.9	17.4
Dutchess	90,486	1,677	63	1,527	721	18.5	16.9	15.9
Erie	653,959	16,500	628	8,140	5,526	25.2	12.4	16.9
Essex	31,556	797	33	503	243	25.3	15.9	15.4
Franklin	42,677	1,136	58	769	201	26.6	18.0	9.4
Fulton	44,699	843	25	637	373	18.9	14.3	16.7
Genesee	37,082	849	22	558	302	22.9	15.0	16.3
Greene	24,390	486	17	415	206	19.9	17.0	16.9
Hamilton	3,799	58	2	53	23	15.3	14.0	12.1
Herkimer	65,241	1,542	45	833	492	23.6	12.8	15.1
Jefferson	82,656	1,852	77	1,130	699	22.4	13.7	16.9
Lewis	22,970	537	28	311	190	23.4	13.5	16.5
Livingston	35,880	798	20	542	196	22.2	15.1	10.9
Madison	38,812	869	36	579	271	22.4	14.9	14.0
Monroe	362,237	7,844	279	4,421	3,276	21.7	12.2	18.1
Montgomery	56,913	1,248	31	755	520	21.9	13.3	18.3
Nassau	129,162	2,851	94	1,413	911	22.1	10.9	14.1
Niagara	122,029	2,942	103	1,485	1,270	24.1	12.2	20.8
Oneida	186,964	4,390	187	2,741	1,317	23.5	14.7	14.1
Onondaga	250,172	5,746	208	3,071	2,042	23.0	12.3	16.3
Ontario	52,005	1,154	38	870	440	22.2	16.7	16.9
Orange	119,667	2,486	104	1,801	953	20.8	15.1	15.9
Orleans	26,884	637	33	389	218	23.7	14.5	16.2
Oswego	69,446	1,612	59	1,090	555	23.2	15.7	16.0
Otsego	45,437	827	27	787	371	18.2	17.3	16.3
Putnam	10,159	214	7	146	91	21.1	14.4	17.9
Rensselaer	110,445	2,031	77	1,755	988	18.4	15.9	17.9
Rockland	44,982	906	37	616	368	20.1	13.7	16.4
St. Lawrence	86,754	2,037	89	1,348	701	23.5	15.5	16.2
Saratoga	59,062	1,145	42	860	497	19.4	14.6	16.8
Schenectady	112,877	2,220	79	1,101	738	19.7	9.8	13.1
Schoharie	20,746	375	16	313	182	18.1	15.1	17.5
Schuyler	12,818	269	7	240	101	21.0	18.7	15.8
Seneca	23,701	412	13	555	143	17.4	23.4	12.1
Steuben	79,183	1,734	72	1,233	784	21.9	15.6	19.8
Suffolk	108,995	2,325	76	2,148	664	21.3	19.7	12.2
Sullivan	31,518	591	21	581	271	18.8	18.4	17.2
Tioga	23,774	482	14	415	283	20.3	17.5	23.8
Tompkins	34,876	729	26	535	340	20.9	15.3	19.5

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[1] Population estimates based upon the United States Censuses of 1910 and 1920 for New York City and the State enumeration of 1915 and United States Census of 1920 for the rest of the State.

Table 32 — STATE OF NEW YORK: *Population, births, stillbirths, deaths and marriages with birth, death and marriage rates per* 1,000 *population, by counties:* 1921 — (Concluded)

AREA	Estimated population[1] July 1, 1921	Births (exclusive of stillbirths)	Stillbirths	Deaths (exclusive of stillbirths)	Marriages	RATES PER 1,000 POPULATION		
						Birth	Death	Persons marrying
Ulster	71,491	1,438	50	1,144	661	20.1	16.0	18.5
Warren	31,246	666	33	469	298	21.3	15.0	19.1
Washington	43,967	858	40	621	365	19.5	14.1	16.6
Wayne	47,010	882	34	640	370	18.8	13.6	15.7
Westchester	351,380	7,803	306	3,756	2,963	22.2	10.7	16.9
Wyoming	29,426	663	16	421	138	22.5	14.3	9.4
Yates	15,921	200	16	254	136	18.2	16.0	17.1

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[1] Population estimates based upon the United States Censuses of 1910 and 1920 for New York City, and the State enumeration of 1915 and United States Census of 1920 for the rest of the State.

Table 33 — STATE OF NEW YORK: *Birth and death rates per* 1,000 *population for* 1921 *in comparison with the annual average for* 1916–1920; *also infant mortality for* 1921 *and* 1920, *by cities*

AREA	RATES PER 1,000 POPULATION[1]				DEATHS OF INFANTS UNDER 1 YEAR OF AGE PER 1,000 BIRTHS	
	BIRTH		DEATH		1921	1920
	1921	Annual average, 1916–1920	1921	Annual average. 1916–1920		
NEW YORK STATE	22.8	23.3	12.3	15.4	75	86
New York City	23.3	24.8	11.2	14.7	71	85
Rest of State	22.1	21.6	13.7	16.2	80	88
Urban	23.7	24.6	12.6	16.0	83	92
Rural[2]	20.6	18.8	14.0	15.2	74	78
I Cities over 175,000	*24.3*	*26.1*	*11.9*	*15.4*	*88*	*98*
Buffalo[3]	25.4	27.3	12.2	16.1	94	103
Rochester[3]	22.3	24.4	11.5	13.8	80	84
Syracuse[3]	24.3	25.3	11.9	15.8	81	104
II Cities 50,000–175,000	*22.8*	*24.3*	*12.5*	*16.1*	*79*	*87*
Albany	20.4	20.1	15.2	18.4	77	78
Binghamton[3]	22.5	25.7	12.1	16.1	82	91
Niagara Falls	28.0	32.6	11.6	15.1	94	94
Schenectady	20.1	24.9	9.7	12.9	64	85
Troy	20.2	19.0	16.4	21.5	93	103
Utica[3]	25.5	27.7	13.0	16.2	88	83
Yonkers	24.5	24.6	9.3	12.8	63	88
IIIa Cities 20,000–50,000	*22.6*	*22.8*	*13.0*	*16.1*	*77*	*88*
Amsterdam	24.7	27.0	12.5	14.1	85	86
Auburn[3]	22.6	23.5	13.7	16.8	73	106
Cohoes	20.3	22.1	12.8	17.1	103	104
Elmira[3]	24.4	25.2	13.5	16.2	65	72
Gloversville	20.8	20.1	15.3	17.6	62	88
Jamestown	22.0	21.0	12.2	13.5	72	86
Kingston	21.1	17.5	17.4	19.5	74	81
Lockport	19.9	19.3	12.9	15.4	93	103
Mount Vernon	23.3	21.8	9.1	11.9	63	82
Newburgh	19.7	20.5	13.9	19.0	77	92
New Rochelle	19.6	19.9	8.0	11.7	61	65
Olean	27.8	27.2	13.8	15.3	79	86
Oswego	24.4	22.2	14.4	15.8	105	74
Poughkeepsie	20.6	22.9	11.9	17.5	69	96
Rome[3]	27.9	30.2	18.0	23.6	71	103
Watertown	24.4	24.7	14.8	20.6	111	112
White Plains	21.1	22.3	11.2	13.2	70	65
IIIb Cities 10,000–20,000	*24.5*	*24.2*	*14.0*	*17.2*	*82*	*91*
Batavia	28.2	25.0	17.8	18.9	109	95
Beacon[3]	19.8	21.3	13.7	17.5	75	117
Corning	26.0	24.7	10.7	16.6	56	63
Cortland	24.6	22.1	14.9	18.7	66	66
Dunkirk	25.4	30.7	11.2	15.9	83	90
Fulton	22.6	24.8	13.1	15.5	71	89
Geneva	26.1	25.8	12.6	16.7	89	124
Glens Falls	22.4	20.3	15.9	18.7	88	82

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[1] For populations, births, deaths, etc., see table 34, page 206.

[2] "Rural" as used in this table, includes all territory outside of the cities and three large villages here listed which constitute "Urban."

[3] Exclusive of population, births and deaths in institutional districts. (For institutional districts, see table 42, page 354.)

Table 33 — STATE OF NEW YORK: *Birth and death rates per* 1000 *population for* 1921 *in comparison with the annual average for* 1916–1920; *also infant mortality for* 1921 *and* 1920, *by cities* — (Concluded)

AREA	RATES PER 1,000 POPULATION[1]				DEATHS OF INFANTS UNDER 1 YEAR OF AGE PER 1,000 BIRTHS	
	BIRTHS		DEATHS			
	1921	Annual average, 1916–1920	1921	Annual average, 1916–1920	1921	1920
IIIb Cities 10,000–20,000—(Cont'd)						
Hornell	20.6	20.1	14.9	15.4	92	61
Hudson[3]	28.8	28.1	16.7	20.1	61	70
Ithaca	24.3	20.5	15.7	16.8	67	94
Johnstown	14.2	16.1	12.8	13.3	64	87
Lackawanna[3]	35.7	[2] 44.3	8.5	[2] 17.1	116	117
Little Falls	29.2	31.0	11.2	17.0	71	85
Middletown[3]	21.8	18.2	17.6	18.3	94	81
North Tonawanda	23.3	28.8	11.3	14.7	90	92
Ogdensburg	34.5	25.2	25.3	25.0	149	190
Oneida	26.8	23.0	13.7	16.7	58	74
Oneonta	19.8	21.0	16.7	17.5	76	51
Peekskill, village	19.1	19.1	11.7	15.0	72	90
Plattsburg	27.9	24.1	17.4	22.6	106	87
Port Chester, village	33.7	33.3	11.1	14.7	38	66
Port Jervis	25.3	22.0	20.3	21.6	114	92
Rensselaer	14.8	11.8	10.7	12.0	101	99
Saratoga Springs	21.2	19.6	20.8	21.5	55	81
Tonawanda	23.5	20.7	7.3	11.1	37	113
Watervliet	17.2	18.6	11.0	14.4	85	98
IIIc Cities under 10,000	*25.8*	*22.2*	*14.0*	*14.6*	*76*	*62*
Canandaigua	33.1	27.9	24.1	22.7	99	37
Glen Cove	27.3	29.1	8.7	11.3	53	86
Mechanicville	21.3	25.5	10.1	11.4	69	62
Norwich	22.3	20.8	18.4	17.5	76	50
Ossining, village[3]	28.6	21.6	14.6	15.9	70	57
Salamanca	25.2	21.6	11.7	14.3	91	82
Sherrill[4]	13.3	16.1	6.9	6.5	40	....

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[1] For populations, births, deaths, etc., see table 34, page 206.

[2] Average, 1917–20; births and deaths in Our Lady of Victory Infant Home not separately reported until 1917.

[3] Exclusive of population, births and deaths in institutional districts. (For institutional districts, see table 42, page 354.)

[4] Special charter.

Table 34 — STATE OF NEW YORK: *Population, births, stillbirths, and deaths by broad age groups, by cities:* 1921

AREA	Estimated population July 1, 1921[1]	Total births (exclusive of still-births)	Still-births	Total deaths (exclusive of still-births)	DEATHS AT AGE OF — Under 1 year	1-4 years	Total under 5 years	5-60 years	60 years and over	Unknown
NEW YORK STATE	**10,543,105**	**240,210**	**10,234**	**130,110**	**18,070**	**6,951**	**25,021**	**54,871**	**50,182**	**36**
New York City	**5,751,859**	**134,241**	**6,292**	**64,257**	**9,548**	**4,124**	**13,672**	**30,911**	**19,674**	......
Rest of State	**4,791,246**	**105,969**	**3,942**	**65,853**	**8,522**	**2,827**	**11,349**	**23,960**	**30,508**	**36**
Cities [2]	**2,557,990**	**60,518**	**2,290**	**32,285**	**4,996**	**1,780**	**6,776**	**12,822**	**12,677**	**10**
Rural [2]	**2,187,525**	**45,105**	**1,633**	**30,584**	**3,343**	**1,037**	**4,380**	**9,589**	**16,590**	**25**
Institutional districts [3]	**45,731**	**346**	**19**	**2,984**	**183**	**10**	**193**	**1,549**	**1,241**	**1**
Cities over 175,000	*1,005,504*	*24,405*	*937*	*12,016*	*2,142*	*771*	*2,913*	*4,964*	*4,139*	......
Buffalo [2]	520,736	13,227	526	6,362	1,241	453	1,694	2,736	1,932	......
Rochester [2]	305,263	6,821	247	3,516	546	207	753	1,355	1,408	......
Syracuse [2]	179,505	4,357	164	2,138	355	111	466	873	799	......
Cities 50,000-175,000	*600,476*	*13,695*	*472*	*7,480*	*1,082*	*482*	*1,564*	*3,031*	*2,883*	*2*
Albany	115,100	2,352	63	1,745	182	70	252	732	761	......
Binghamton [2]	67,380	1,513	39	816	124	41	165	332	319	......
Niagara Falls	53,543	1,500	54	623	141	66	207	258	158	......
Schenectady	91,453	1,841	71	883	118	41	159	359	365	......
Troy	70,876	1,435	58	1,161	134	70	204	442	515	......
Utica [2]	98,928	2,524	99	1,291	223	130	353	455	483	......
Yonkers	103,196	2,530	88	961	160	64	224	453	282	2
Cities 20,000-50,000	*581,347*	*11,785*	*464*	*6,761*	*909*	*275*	*1,184*	*2,572*	*3,002*	*3*
Amsterdam	33,264	821	21	415	70	19	89	156	170	......
Auburn [2]	35,773	808	26	489	59	19	78	174	237	......
Cohoes	22,841	464	14	292	48	22	70	114	106	2
Elmira [2]	45,956	1,120	40	621	73	28	101	216	304	......
Gloversville	22,369	466	12	343	29	14	43	126	174	......
Jamestown	39,289	866	40	480	62	22	84	181	214	1
Kingston	26,797	565	19	465	42	9	51	218	196	......
Lockport	22,164	441	21	286	41	6	47	99	140	......
Mount Vernon	44,409	1,034	44	406	65	21	86	153	167	......
Newburgh	31,181	614	28	433	47	14	61	193	179	......
New Rochelle	37,671	737	35	301	45	12	57	131	113	......
Olean	21,351	594	27	295	47	11	58	120	117	......
Oswego	23,037	562	14	332	59	7	66	113	153	......
Poughkeepsie	35,748	736	27	426	51	15	66	138	222	......
Rome [2]	25,173	702	32	453	50	28	78	172	203	......
Watertown	32,722	800	43	483	89	19	108	175	200	......
White Plains	21,602	455	21	241	32	9	41	93	107	......
Cities 10,000-20,000	*377,135*	*9,253*	*367*	*5,277*	*758*	*211*	*969*	*2,011*	*2,293*	*4*
Batavia	13,627	384	15	242	42	7	49	89	104	......
Beacon [2]	10,061	199	13	138	15	2	17	52	68	1
Corning	16,593	431	20	177	24	6	30	71	76	......
Cortland	13,597	334	15	202	22	3	25	69	108	......

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[1] Population estimates based upon the average annual increase or decrease between the United States Censuses of 1910 and 1920 for New York City, and the State Enumeration of 1915 and United States Census of 1920 for the rest of the State.

[2] Exclusive of the population, births and deaths in institutional districts. "Cities" as used in this table, includes all cities and three large villages, Ossining, Peekskill and Port Chester; "rural" includes all territory outside of the institutional districts and cities and three large villages listed.

[3] For "instutional districts," see Table 42, page 354.

Table 34 — STATE OF NEW YORK: *Population, births, stillbirths, and deaths by broad age groups, by cities:* 1921 — (Concluded)

AREA	Estimated population July 1, 1921[1]	Total births (exclusive of stillbirths)	Stillbirths	Total deaths (exclusive of stillbirths)	DEATHS AT AGE OF —					
					Under 1 year	1–4 years	Total under 5 years	5–60 years	60 years and over	Unknown
Dunkirk	19,816	504	19	222	42	13	55	96	71	......
Fulton	13,666	309	18	179	22	7	29	59	90	1
Geneva	15,111	394	15	190	35	11	46	68	76	......
Glens Falls	16,741	375	16	267	33	3	36	97	133	1
Hornell	15,245	314	13	227	29	5	34	88	105	......
Hudson[2]	11,337	327	12	189	20	7	27	67	94	1
Ithaca	17,087	416	19	268	28	8	36	94	138	......
Johnstown	10,980	156	10	140	10	3	13	43	84	......
Lackawanna[2]	18,333	654	12	156	76	18	94	53	9	......
Little Falls	13,031	381	10	146	27	2	29	60	57	......
Middletown[2]	16,150	352	20	285	33	20	53	100	132	......
North Tonawanda	16,131	376	12	182	34	13	47	80	55	......
Ogdensburg[2]	11,701	404	13	296	60	6	66	114	116	......
Oneida	10,894	292	7	149	17	3	20	58	71	......
Oneonta	11,945	236	9	199	18	5	23	86	90	......
Peekskill, village	15,988	306	13	187	22	8	30	74	83	......
Plattsburg	11,163	311	17	194	33	7	40	75	79	......
Port Chester, village	17,046	575	18	190	22	11	33	90	67	......
Port Jervis	10,419	264	20	212	30	10	40	89	83	......
Rensselaer	10,696	158	6	114	16	4	20	28	66	......
Saratoga Springs	12,981	275	9	270	15	10	25	112	133	......
Tonawanda	10,369	244	6	76	9	4	13	30	33	......
Watervliet	16,427	282	10	180	24	15	39	69	72	......
Cities under 10,000	*53,528*	*1,380*	*50*	*751*	*105*	*41*	*146*	*244*	*360*	*1*
Canandaigua	7,309	242	4	176	24	9	33	50	92	1
Glen Cove	8,945	244	3	78	13	7	20	28	30	......
Mechanicville	8,152	174	4	82	12	8	20	24	38	......
Norwich	8,244	184	13	152	14	4	18	57	77	......
Ossining, village[2]	9,426	270	16	138	19	3	22	44	72	......
Salamanca	9,573	241	10	112	22	8	30	38	44	......
Sherrill[3]	1,879	25	......	13	1	2	3	3	7	......

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[1] Population estimates based upon the average annual increase or decrease between the United States Censuses of 1910 and 1920, for New York City and the State Enumeration of 1915 and United States Census of 1920 for the rest of the State.

[2] Exclusive of the population, births and deaths in institutional districts. (For institutional districts, see Table 42, page 354.)

[3] Incorporated as a city by special charter.

Table 35 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	All deaths	DEATHS EPIDEMIC, INFECTIOUS AND Typhoid fever 1	Small-pox 6	Measles 7	Scarlet fever 8	Whooping cough 9	Diphtheria 10	Influenza 11	Acute anterior poliomyelitis 22	Cerebrospinal meningitis 24
1	**NEW YORK STATE**	130,110	377	1	412	666	756	1,702	778	266	177
2	**New York City**	64,257	123	......	165	385	350	891	384	143	149
3	**Rest of State**	65,853	254	1	247	281	406	811	394	123	22
4	**Cities**[2]	32,285	142	1	134	186	241	579	121	46	27
5	**Rural**[2]	30,584	106	......	113	94	158	225	265	77	6
6	**Institutional districts**[2]	2,984	6	......	......	1	7	7	8	......	......
7	*I Cities over 175,000*	*12,016*	*38*	*1*	*35*	*96*	*140*	*303*	*11*	*8*	*3*
8	Buffalo[2]	6,362	22	1	27	59	80	148	6	5	3
9	Rochester[2]	3,516	9	......	2	24	41	78	4	1	......
10	Syracuse[2]	2,138	7	......	6	13	19	77	1	2	......
11	*II Cities 50,000-175,000*	*7,480*	*36*	......	*55*	*41*	*38*	*121*	*38*	*15*	*13*
12	Albany	1,745	5	......	2	3	7	21	11	......	......
13	Binghamton[2]	816	3	......	3	5	1	13	6	......	......
14	Niagara Falls	623	5	......	8	10	5	25	4	......	4
15	Schenectady	883	5	......	3	10	3	13	2	1	3
16	Troy	1,161	7	......	11	2	12	5	5	1	......
17	Utica[2]	1,291	7	......	27	1	5	32	7	12	1
18	Yonkers	961	4	......	1	10	5	12	3	1	5
19	*IIIa Cities 20,000-50,000*	*6,761*	*35*	......	*18*	*25*	*21*	*92*	*25*	*8*	*3*
20	Amsterdam	415	......	......	......	......	......	5	2	......	......
21	Auburn[2]	489	3	......	......	3	......	14	......	......	......
22	Cohoes	292	2	......	1	1	3	4	2	......	......
23	Elmira[2]	621	6	......	1	3	2	4	4	......	......
24	Gloversville	343	1	......	......	6	1	5	6	......	......
25	Jamestown	480	1	......	2	......	2	7	2	......	......
26	Kingston	465	5	......	......	4	......	5	4	......	......
27	Lockport	286	1	......	2	......	2	7	1	......	......
28	Mount Vernon	406	4	......	1	1	4	3	2	......	......
29	Newburgh	433	1	......	......	2	1	3	......	1	......
30	New Rochelle	301	2	......	1	1	1	3	2	......	3
31	Olean	295	1	......	......	1	3	2	1	1	......
32	Oswego	332	1	......	......	......	......	4	......	......	......
33	Poughkeepsie	426	3	......	......	......	......	7	1	......	......
34	Rome[2]	453	1	......	7	......	......	19	......	3	......
35	Watertown	483	2	......	3	3	2	......	1	3	......
36	White Plains	241	1	......	......	......	......	......	......	......	......
37	*IIIb Cities 10,000-20,000*	*5,277*	*33*	......	*18*	*18*	*38*	*56*	*39*	*14*	*2*
38	Batavia	242	1	......	......	......	1	2	3	......	......
39	Beacon[2]	138	1	......	1	1	1	......	......	1	......
40	Corning	177	1	......	......	3	2	......	......	......	......
41	Cortland	202	2	......	......	......	1	3	1	......	......
42	Dunkirk	222	2	......	......	3	......	8	2	......	1
43	Fulton	179	2	......	......	......	......	1	1	3	......
44	Geneva	190	1	......	......	1	3	5	......	1	......
45	Glens Falls	267	2	......	1	......	......	......	......	......	......

(See footnotes, page 206.)

***stillbirths) from important causes, by cities:* 1921**

FROM—													
OTHER GENERAL DISEASES						Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM		DISEASES OF THE RESPIRATORY SYSTEM				Line number
Tuberculosis 31–37				Cancer 43–49	Diabetes 57		Organic heart disease 90	Arteriosclerosis 91	Bronchitis 99	Pneumonia 100, 101			
Total all forms 31–37	Pulmonary and acute miliary 31, 37c	Tuberculous meningitis 32	Other forms 33–37 a, b							Total, all forms 100, 101	Broncho 100	Lobar and unqualified 101	
10,775	9,407	630	738	11,163	2,220	7,148	22,093	4,655	1,145	10,645	4,779	5,866	1
5,922	5,143	383	396	5,573	1,120	886	12,005	2,699	547	6,477	2,900	3,577	2
4,853	4,264	247	342	5,590	1,100	6,262	10,088	1,956	598	4,168	1,879	2,289	3
2,026	1,671	172	183	2,891	609	2,671	4,500	718	297	2,062	916	1,146	4
2,376	2,171	71	134	2,610	481	3,477	5,031	979	284	1,866	817	1,049	5
451	422	4	25	89	10	114	557	259	17	240	146	94	6
866	*728*	*64*	*74*	*1,066*	*246*	*876*	*1,632*	*226*	*112*	*744*	*244*	*400*	7
554	487	33	34	530	115	422	777	143	79	370	86	184	8
190	149	16	25	342	82	285	542	52	24	217	96	121	9
122	92	15	15	194	48	168	313	31	9	157	62	95	10
479	*380*	*54*	*45*	*704*	*117*	*613*	*1,036*	*200*	*57*	*537*	*245*	*292*	11
137	116	8	13	171	36	147	271	66	12	95	44	51	12
47	37	6	4	76	8	75	111	15	12	57	19	38	13
28	18	6	4	50	4	32	55	7	5	55	29	26	14
45	33	5	7	75	15	101	130	33	8	59	27	32	15
65	46	13	6	117	19	100	196	34	3	87	46	41	16
52	39	9	4	135	19	86	165	25	9	96	50	46	17
105	91	7	7	80	16	72	106	20	8	88	30	58	18
422	*363*	*30*	*29*	*599*	*116*	*644*	*1,065*	*141*	*65*	*407*	*161*	*246*	19
22	19	2	1	32	7	34	57	7	2	26	10	16	20
36	29	4	3	50	6	57	77	4	8	21	8	13	21
26	22	2	2	21	9	33	47	9	1	19	11	8	22
22	16	1	5	51	16	52	89	18	8	40	11	29	23
12	11	....	1	38	5	31	67	3	2	15	6	9	24
34	30	3	1	40	9	36	65	8	9	22	6	16	25
43	40	2	1	35	11	28	60	15	7	31	13	18	26
14	13	....	1	18	1	25	47	13	2	14	6	8	27
22	19	3	......	43	3	29	68	1	......	45	26	19	28
42	35	3	4	41	7	56	67	5	5	27	12	15	29
16	13	1	2	23	4	25	55	5	4	31	12	19	30
10	7	1	2	33	6	18	38	7	1	16	6	10	31
20	18	2	......	25	4	41	61	1	1	19	6	13	32
21	15	5	1	43	9	64	7[illegible]	22	5	25	11	14	33
46	42	1	3	43	4	41	68	10	9	19	6	13	34
27	26	....	1	39	11	51	75	5	1	16	6	10	35
9	8	....	1	24	4	21	50	5	......	21	5	16	36
236	*185*	*21*	*29*	*448*	*114*	*466*	*652*	*136*	*57*	*327*	*150*	*177*	37
6	6	....	......	20	5	26	16	7	5	11	6	5	38
9	8	....	1	20	......	18	18	5	......	13	3	10	39
10	9	1	......	12	6	19	21	7	1	13	6	7	40
6	4	1	1	22	4	25	21	6	3	16	7	9	41
12	8	1	3	14	1	15	20	7	2	19	10	9	42
6	5	....	1	7	3	22	24	4	3	15	4	11	43
13	11	....	2	18	8	15	14	3	3	16	9	7	44
8	8	....	......	26	6	24	44	16	2	11	6	5	45

Table 35 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	All deaths	DEATHS								
			EPIDEMIC, INFECTIOUS AND								
			Typhoid fever 1	Smallpox 6	Measles 7	Scarlet fever 8	Whooping cough 9	Diphtheria 10	Influenza 11	Acute anterior poliomyelitis 22	Cerebrospinal meningitis 24
46	Hornell	227	2	.....	.....	.....	.....	2	2	.....	.....
47	Hudson[2]	189	.....	.....	.....	.....	.....	1	2	1	.....
48	Ithaca	268	3	.....	.....	.....	1	2	2	1	.....
49	Johnstown	140	.....	.....	.....	.....	2	.....	.....	.....	1
50	Lackawanna[2]	156	.....	.....	.....	.....	10	.....	1	2	.....
51	Little Falls	146	3	.....	.....	2	.....	.....	.....	.....	.....
52	Middletown[2]	285	.....	.....	4	1	6	3	4	1	.....
53	North Tonawanda	182	3	.....	.....	.....	1	10	1	.....	.....
54	Ogdensburg[2]	296	3	.....	1	.....	1	.....	3	.....	.....
55	Oneida	149	1	.....	.....	.....	.....	1	1	.....	.....
56	Oneonta	199	1	.....	1	1	1	2	1	1	.....
57	*Peekskill, village*	187	.....	.....	2	.....	2	2	3	1	.....
58	Plattsburg	194	1	.....	.....	1	.....	3	1	.....	.....
59	*Port Chester, village*	190	1	.....	5	2	.....	3	2	1	.....
60	Port Jervis	212	1	.....	2	1	1	2	7	.....	.....
61	Rensselaer	114	.....	.....	.....	.....	.....	1	.....	.....	.....
62	Saratoga Springs	270	.....	.....	1	2	.....	1	1	.....	.....
63	Tonawanda	76	1	.....	.....	.....	.....	1	.....	1	.....
64	Watervliet	180	1	.....	.....	.....	5	3	2	.....	.....
65	*IIIe Cities under 10,000.*	*751*	.....	.....	*8*	*6*	*4*	*7*	*5*	*1*	*1*
66	Canandaigua	176	.....	.....	.....	.....	1	1	1	.....	.....
67	Glen Cove	78	.....	.....	2	.....	1	1	3	.....	.....
68	Mechanicville	82	.....	.....	5	2	.....	.....	.....	.....	.....
69	Norwich	152	.....	.....	.....	.....	1	2	1	1	.....
70	*Ossining, village*[2]	138	.....	.....	.....	2	1	1	.....	.....	1
71	Salamanca	112	.....	.....	1	2	.....	.....	.....	.....	.....
72	Sherrill[3]	13	.....	.....	.....	.....	.....	2	.....	.....	.....

(See footnotes, page 207.)

stillbirths) from important causes: **1921 — (Continued)**

FROM													
OTHER GENERAL DISEASES						Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM		DISEASES OF THE RESPIRATORY SYSTEM				Line number
Tuberculosis 31–37				Cancer 43–49	Diabetes 57		Organic heart disease 90	Arteriosclerosis 91	Bronchitis 99	Pneumonia 100, 101			
Total all forms 31–37	Pulmonary and acute miliary 31, 37c	Tuberculous meningitis 32	Other forms 33–37 a, b							Total, all forms 100, 101	Broncho 100	Lobar and unqualified 101	
7	6	....	1	19	2	15	47	6	3	13	10	3	46
11	7	3	1	13	6	23	17	6	......	12	7	5	47
10	4	1	5	27	8	19	27	12	1	24	5	19	48
7	6	1	......	15	3	16	21	3	......	10	5	5	49
7	5	2	......	6	......	3	13	....	3	18	15	3	50
4	3	1	......	13	6	8	14	3	2	7	2	5	51
14	12	1	1	20	5	33	51	5	......	20	11	9	52
10	10	....	......	20	5	11	16	1	2	7	3	4	53
9	7	2	......	26	8	20	27	11	5	9	2	7	54
6	3	2	1	14	2	13	26	5	2	5	3	2	55
6	4	1	1	9	3	16	33	5	......	15	5	10	56
13	11	....	2	17	11	28	19	2	5	10	2	8	57
11	7	1	3	12	3	17	23	3	5	12	3	9	58
5	4	....	1	14	4	16	23	5	1	8	3	5	59
6	5	....	1	16	5	14	23	1	3	5	3	2	60
1	1	....	......	15	3	16	17	5	1	8	6	2	61
17	13	1	3	22	6	18	40	2	......	12	6	6	62
8	7	....	1	8	1	4	8	5	2	7	3	4	63
13	11	2	......	23	3	15	29	1	3	11	5	6	64
24	*16*	*5*	*6*	*74*	*17*	*75*	*117*	*11*	*6*	*47*	*16*	*31*	65
4	4	....	......	18	1	18	25	2	2	12	5	7	66
1	1	....	......	8	2	7	19	....	......	7	1	6	67
3	2	....	1	5	2	8	13	4	2	7	4	3	68
3	1	....	2	19	6	10	23	2	1	7	1	6	69
7	2	2	3	11	4	14	24	4	1	4	1	3	70
6	5	1	......	12	2	14	11	2	......	9	3	6	71
......	....	....	......	1	......	2	2	....	......	1	1	......	72

Table 35 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM —								
		DISEASES OF THE DIGESTIVE SYSTEM				Nephritis and Brights disease 128, 129	THE PUERPERAL STATE		MALFORMATIONS OF BABY	
		Diarrhea and enteritis 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122		Puerperal septicemia 146	Other puerperal affections 143-5, 147-9	Congenital malformations 159	Premature birth 161a
1	**New York State**	3,952	1,468	1,226	729	9,481	412	984	1,504	4,233
2	**New York City**	1,987	824	651	335	4,105	171	575	672	2,047
3	**Rest of State**	1,965	644	575	394	5,376	241	409	832	2,186
4	**Cities** [2]	1,251	495	365	198	2,664	158	260	455	1,294
5	**Rural** [2]	668	144	191	187	2,517	82	145	363	849
6	**Institutional Districts** [3]	46	5	19	9	195	1	4	14	23
7	*I Cities over 175,000*	*656*	*187*	*118*	*61*	*939*	*57*	*89*	*193*	*513*
8	Buffalo [2]	395	111	66	28	460	27	49	113	298
9	Rochester [2]	165	51	30	24	342	22	28	51	144
10	Syracuse [2]	96	25	22	9	137	8	12	29	73
11	*II Cities 50,000–175,000*	*258*	*96*	*80*	*45*	*630*	*38*	*59*	*86*	*280*
12	Albany	33	16	23	15	154	6	17	17	45
13	Binghamton [2]	32	15	4	9	71	2	5	14	32
14	Niagara Falls	59	3	3	2	31	2	4	8	28
15	Schenectady	9	12	12	2	70	5	8	8	42
16	Troy	38	15	18	6	100	10	4	7	33
17	Utica [2]	54	24	11	6	111	5	12	21	54
18	Yonkers	33	11	9	5	83	8	9	11	46
19	*IIIa Cities 20,000–50,000*	*188*	*95*	*82*	*45*	*576*	*29*	*55*	*87*	*264*
20	Amsterdam	14	5	8	4	32	......	4	4	20
21	Auburn [2]	16	6	3	1	40	2	2	7	16
22	Cohoes	18	2	1	3	18	......	1	7	6
23	Elmira [2]	14	11	8	6	84	2	3	3	22
24	Gloversville	9	9	5	3	35	1	3	2	9
25	Jamestown	8	4	4	2	44	4	2	5	22
26	Kingston	4	12	14	4	41	2	4	2	17
27	Lockport	12	7	1	2	17	1	2	8	3
28	Mount Vernon	11	1	1	4	50	2	7	8	17
29	Newburgh	7	4	4	3	44	3	3	8	17
30	New Rochelle	7	4	3	4	19	......	2	5	15
31	Olean	14	11	4	1	15	5	7	2	15
32	Oswego	9	3	3	2	29	......	......	6	17
33	Poughkeepsie	9	4	3	......	38	2	2	1	10
34	Rome [2]	18	5	4	4	32	2	2	6	17
35	Watertown	16	4	12	2	20	3	7	13	22
36	White Plains	2	3	4	......	18	......	2	......	13
37	*IIIb Cities 10,000–20,000*	*132*	*106*	*71*	*45*	*445*	*30*	*54*	*79*	*215*
38	Batavia	8	8	2	2	15	......	4	2	19
39	Beacon [2]	1	......	2	1	15	......	1	1	3
40	Corning	6	3	3	4	14	1	2	2	6
41	Cortland	2	4	5	1	21	......	1	5	5
42	Dunkirk	7	6	3	2	14	1	4	3	12
43	Fulton	4	5	......	1	14	1	3	1	5
44	Geneva	2	1	3	......	20	2	......	5	11
45	Glens Falls	4	9	4	1	14	1	1	1	15

(See footnotes, page 206.)

stillbirths) from important causes: **1921 — (Continued)**

(Concluded)

AND DISEASES INFANCY			EXTERNAL CAUSES								
			Accidents								
Congenital debility 160	Other causes peculiar to early infancy 161b, 162-63	Old age 164	Total accidents 175-96, 201-3	Drowning 182	Railroad 188a	Automobile 188c	Other accidents 175-96, 201-3	Suicides 164-74	Homicides 197-200	All other causes	Line number
1,222	2,144	706	7,187	869	392	1,629	4,297	1,442	501	17,939	1
729	1,263	223	3,483	366	80	849	2,188	831	303	8,241	2
493	881	485	3,704	503	312	780	2,109	611	198	9,698	3
230	551	145	1,860	157	134	437	1,132	272	127	4,714	4
262	318	339	1,799	346	176	342	935	315	70	4,166	5
1	12	1	45	....	2	1	42	24	1	818	6
73	*239*	*22*	*623*	*47*	*49*	*156*	*371*	*112*	*60*	*1,673*	7
34	149	8	308	33	34	80	161	54	38	885	8
8	58	1	194	7	8	44	135	36	14	455	9
31	32	13	121	7	7	32	75	22	8	333	10
50	*101*	*38*	*432*	*28*	*26*	*112*	*266*	*75*	*32*	*1,080*	*11*
7	28	5	98	6	6	33	48	24	8	260	12
7	4	3	46	2	5	11	28	6	2	132	13
4	11	8	64	1	8	11	44	5	7	87	14
6	16	2	37	4	1	2	30	11	1	136	15
11	14	8	60	7	1	17	35	8	2	168	16
9	11	9	76	4	3	22	47	10	8	191	17
6	17	3	56	4	2	16	34	11	4	111	18
48	*100*	*45*	*406*	*44*	*22*	*86*	*254*	*45*	*12*	*999*	19
5	10	2	40	3	3	6	28	1	....	72	20
6	7	9	23	....	1	5	17	2	....	70	21
2	6	....	13	4	....	2	7	....	....	37	22
1	13	1	38	1	4	7	26	4	3	92	23
1	1	4	16	....	....	2	14	2	2	49	24
3	11	2	28	3	1	7	17	6	1	94	25
....	6	3	25	2	4	6	13	5	1	77	26
3	5	4	23	3	....	8	12	2	2	46	27
2	7	2	15	1	1	7	6	6	....	47	28
....	3	....	24	1	1	3	19	4	....	48	29
1	5	2	20	2	1	7	10	....	....	38	30
3	3	2	20	....	1	3	16	2	....	53	31
5	11	4	24	12	2	4	6	2	....	40	32
2	6	2	19	3	....	2	14	1	1	54	33
2	2	2	24	5	2	2	15	2	....	61	34
9	2	6	40	4	1	7	28	4	1	83	35
3	1	....	14	....	....	8	6	2	1	38	36
52	*90*	*36*	*358*	*37*	*31*	*76*	*214*	*38*	*21*	*850*	37
3	5	2	22	2	2	5	13	1	1	45	38
3	1	....	6	....	....	2	4	....	1	15	39
3	2	....	8	....	3	2	3	3	1	24	40
....	3	1	5	....	....	1	4	3	....	36	41
2	5	1	14	1	3	2	8	1	2	39	42
2	2	2	14	2	....	1	11	....	1	33	43
4	4	1	9	....	1	2	6	2	....	25	44
1	5	1	21	2	....	5	14	2	....	47	45

Table 35 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM —								
		DISEASES OF THE DIGESTIVE SYSTEM					THE PUERPERAL STATE		MALFORMATIONS OF EARLY	
		Diarrhea and enteritis 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122	Nephritis and Brights disease 128, 129	Puerperal septicemia 146	Other puerperal affections 142-5, 147-9	Congenital malformations 150	Premature birth 151a
46	Hornell		5	1	4	17	1	......	2	9
47	Hudson [2]	1	4	4	......	15	2	......	2	10
48	Ithaca	4	1	5	2	36	3	1	2	11
49	Johnstown	5 2	......	2	2	16	1	......	2	1
50	Lackawanna [2]	18	1	1	2	5	......	2	3	18
51	Little Falls	4	4	1	......	7	1	6	3	6
52	Middletown [2]	7	10	1	......	30	......	2	4	7
53	North Tonawanda	4	2	2	......	7	1	2	8	12
54	Ogdensburg [2]	[illegible]	12	6	2	24	1	7	18	9
55	Oneida	1	3	1	2	6	1	1	2	3
56	Oneonta	2	8	3	......	24	4	5	1	5
57	*Peekskill, village*	2	2	2	1	12	......	......	5	5
58	Plattsburg	1	3	1	1	15	3	3	......	13
59	*Port Chester, village*	3	2	4	......	23	4	......	......	9
60	Port Jervis	10	7	4	11	6	......	6	1	5
61	Rensselaer	2	......	......	......	11	......	1	1	2
62	Saratoga Springs	7	6	7	4	44	2	1	1	5
63	Tonawanda	2	......	......	1	4	......	......	2	4
64	Watervliet	10	......	4	1	13	......	1	3	5
65	*IIIc Cities under 10,000*	*17*	*11*	*14*	*2*	*74*	*4*	*5*	*9*	*23*
66	Canandaigua	5	3	3	1	16	1	1	4	5
67	Glen Cove	3	......	......	......	12	......	......	4	3
68	Mechanicville	1	......	1	1	6	......	......	......	2
69	Norwich	3	4	3	......	19	2	2	......	2
70	*Ossining, village*	1	1	3	......	14	1	1	......	4
71	Salamanca	3	3	4	......	7	......	1	1	6
72	Sherrill [2]	1	......	......	......	......	......	......	......	......

(See footnotes, page 207.)

stillbirths) from important causes: 1921 — (Concluded)

(*Concluded*)

AND DISEASES INFANCY			EXTERNAL CAUSES								
			Accidents								
Congenital debility 160	Other causes peculiar to early infancy 161b, 162–63	Old age 164	Total accidents 175–96, 201–3	Drowning 182	Railroad 188a	Automobile 188c	Other accidents 175–96, 201–03	Suicides 164–74	Homicides 197–200	All other causes	Line number
2	3	1	13	....	3	3	7	4	1	45	46
1	2	....	16	2	1	1	12	2	1	31	47
....	5	2	17	4	1	1	11	2	1	41	48
....	1	1	5	....	....	....	5	1	....	27	49
2	7	....	15	....	1	6	8	3	1	15	50
2	4	5	15	2	1	5	7	1	1	24	51
2	8	....	18	....	3	6	9	1	....	28	52
....	2	5	15	4	1	2	8	1	....	34	53
9	5	4	21	3	1	9	8	2	....	44	54
....	2	1	8	....	....	1	7	3	4	33	55
1	3	3	13	2	3	....	8	....	1	31	56
....	2	2	14	1	2	4	7	2	....	26	57
5	4	2	19	3	1	4	11	1	3	28	58
....	5	....	19	....	....	6	13	1	....	30	59
3	6	2	14	....	2	3	9	2	....	48	60
2	1	....	7	2	....	1	4	....	....	20	61
....	3	....	16	1	2	2	11	1	1	50	62
1	....	....	6	3	....	2	1	....	....	10	63
4	....	....	8	3	....	....	5	....	1	21	64
7	*21*	*4*	*41*	*1*	*6*	*7*	*27*	*1*	*2*	*112*	65
3	4	1	10	....	2	1	7	....	1	32	66
1	1	....	1	1	....	....	....	....	....	2	67
1	2	....	4	....	....	1	3	....	1	12	68
1	2	1	8	....	2	....	6	....	....	29	69
....	8	1	13	....	....	3	10	....	....	17	70
1	4	1	5	....	2	2	1	1	....	16	71
....	....	....	....	....	....	....	....	....	....	4	72

Table 36 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive*

SEX, COLOR, NATIVITY AND MARITAL CONDITION	All deaths	DEATHS AT										
		Under 1 years	1+ years	2+ years	3+ years	4+ years	Total under 5 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years
TOTAL DEATHS (excl. of stillbirths)...	65,853	8,522	1,285	647	491	404	11,349	1,354	931	1,186	1,606	1,811
Males..........	33,686	4,793	669	351	266	219	6,298	756	509	635	770	875
Females........	32,167	3,729	616	296	225	185	5,051	598	422	551	836	936
COLOR												
White............	64,836	8,367	1,246	631	487	402	11,133	1,340	917	1,164	1,555	1,737
Males..........	33,160	4,707	652	345	264	218	6,186	745	503	624	743	837
Females........	31,670	3,660	594	286	223	184	4,947	595	414	540	812	900
Negro............	947	146	34	15	3	2	200	12	13	20	46	68
Males..........	487	80	16	6	1	1	104	10	5	9	26	35
Females........	460	66	18	9	2	1	96	2	8	11	20	33
Indian...........	69	8	4	1	1	......	14	2	1	2	5	4
Males..........	33	5	1	......	1	......	7	1	1	2	1	1
Females........	36	3	3	1	......	......	7	1	......	......	4	3
Chinese, Japanese and other colored......	7	1	1	......	......	......	2	......	......	......	......	2
Males..........	6	1	......	......	......	......	1	......	......	......	......	2
Females........	1	......	1	......	......	......	1	......	......	......	......	......
NATIVITY												
Native...........	50,929	8,497	1,267	641	487	402	11,294	1,328	879	1,078	1,338	1,339
Males..........	25,831	4,785	658	347	263	217	6,260	744	478	573	618	617
Females........	25,098	3,712	609	294	224	185	5,024	584	401	505	720	722
Foreign-born.....	14,453	17	16	6	4	2	45	22	47	103	250	454
Males..........	7,525	5	9	4	3	2	23	10	28	57	137	243
Females........	6,928	12	7	2	1	......	22	12	19	46	113	211
Unknown........	471	8	2	......	......	......	10	4	5	5	18	18
Males..........	330	3	2	......	......	......	5	2	3	5	15	15
Females........	141	5	......	......	......	......	5	2	2	......	3	3
MARITAL CONDITION												
Single............	22,966	8,522	1,285	647	491	404	11,349	1,354	931	1,109	1,072	747
Males..........	12,846	4,793	669	351	266	219	6,298	756	509	627	652	504
Females........	10,120	3,729	616	296	225	185	5,051	598	422	482	420	243
Married..........	25,522	......	......	......	......	......	......	......	......	72	513	1,009
Males..........	14,577	......	......	......	......	......	......	......	......	6	109	346
Females........	10,945	......	......	......	......	......	......	......	......	66	404	663
Widowed.........	16,788	......	......	......	......	......	......	......	......	3	10	34
Males..........	5,869	......	......	......	......	......	......	......	......	......	2	13
Females........	10,919	......	......	......	......	......	......	......	......	3	8	21
Divorced.........	330	......	......	......	......	......	......	......	......	......	6	12
Males..........	176	......	......	......	......	......	......	......	......	......	2	4
Females........	154	......	......	......	......	......	......	......	......	......	4	8
Unknown........	247	......	......	......	......	......	......	......	......	2	5	9
Males..........	218	......	......	......	......	......	......	......	......	2	5	8
Females........	29	......	......	......	......	......	......	......	......	......	......	1

of stillbirths) by sex, color, nativity, and marital conditions according to age of decedent: **1921**

AGE OF —

30–34 years	35–39 years	40–44 years	45–49 years	50–54 years	55–59 years	60–64 years	65–69 years	70–74 years	75–79 years	80–84 years	85–89 years	90–94 years	95–99 years	100 years and over	Age unknown
1,973	2,204	2,453	2,901	3,518	4,023	5,077	5,617	5,986	5,853	4,414	2,487	854	193	27	36
991	1,160	1,315	1,530	1,846	2,139	2,649	2,891	3,015	2,800	2,023	1,053	330	70	10	21
982	1,044	1,138	1,371	1,672	1,884	2,428	2,726	2,971	3,053	2,391	1,434	524	123	17	15
1,920	2,129	2,382	2,842	3,451	3,968	5,026	5,569	5,929	5,800	4,399	2,468	847	193	26	35
968	1,117	1,279	1,499	1,800	2,111	2,630	2,866	2,995	2,775	2,015	1,041	327	70	9	20
952	1,012	1,103	1,343	1,651	1,857	2,396	2,703	2,934	3,025	2,384	1,427	520	123	17	15
48	70	69	55	61	51	50	43	55	49	14	17	5	.....	.....	1
21	40	35	30	43	25	19	22	19	24	7	11	1	.....	.....	1
27	30	34	25	18	26	31	21	36	25	7	6	4	.....	.....	....
5	3	2	4	5	4	1	5	2	4	1	2	2	.....	1	....
2	1	1	1	2	3	.....	3	1	1	1	1	2	.....	1	....
3	2	1	3	3	1	1	2	1	3	.....	1	.....	.....	.....	....
.....	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....
.....	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....
1,381	1,542	1,734	2,100	2,527	2,854	3,737	4,079	4,172	4,041	3,056	1,716	575	131	18	10
636	755	880	1,066	1,298	1,473	1,925	2,100	2,119	1,917	1,371	726	206	50	6	3
745	787	854	1,034	1,229	1,381	1,812	1,979	2,053	2,124	1,685	990	369	81	12	7
571	633	692	778	954	1,142	1,297	1,497	1,767	1,774	1,330	748	273	60	8	8
338	380	412	443	518	646	691	758	868	863	641	320	121	20	4	4
233	253	280	335	436	496	606	739	899	911	689	428	152	40	4	4
21	29	27	23	37	27	43	41	47	38	28	23	6	2	1	18
17	25	23	21	30	20	33	33	28	20	11	7	3	.....	.....	14
4	4	4	2	7	7	10	8	19	18	17	16	3	2	1	4
580	525	525	592	570	606	684	615	598	495	343	176	71	10	4	10
387	348	337	361	342	343	378	321	277	207	123	53	17	2	1	3
193	177	188	231	228	263	306	294	321	288	220	123	54	8	3	7
1,316	1,549	1,736	2,014	2,363	2,620	3,066	2,957	2,689	2,035	1,113	372	78	14	2	4
572	748	878	1,036	1,278	1,507	1,802	1,890	1,778	1,407	838	299	67	11	2	3
744	801	858	978	1,085	1,113	1,264	1,067	911	628	275	73	11	3	.....	1
48	87	141	238	519	751	1,252	1,984	2,657	3,293	2,941	1,930	702	169	21	8
21	32	60	98	181	251	417	638	933	1,170	1,049	695	244	57	7	1
27	55	81	140	338	500	835	1,346	1,724	2,123	1,892	1,235	458	112	14	7
19	23	30	37	37	30	46	39	19	21	5	5	1	.....	.....	....
3	14	20	15	19	23	25	23	10	11	3	3	1	.....	.....	....
16	9	10	22	18	7	21	16	9	10	2	2	.....	.....	.....	....
10	20	21	20	29	16	29	22	23	9	12	4	2	.....	.....	14
8	18	20	20	26	15	27	19	17	5	10	3	1	.....	.....	14
2	2	1	.....	3	1	2	3	6	4	2	1	1	.....	.....	....

Table 37 — STATE OF NEW YORK: *Deaths (exclusive of*

AREA	All deaths	DEATHS AT			
		Under 1 year	1–4 years	Total under 5 years	5–9 years
NEW YORK STATE	**130,110**	**18,070**	**6,951**	**25,021**	**3,022**
New York City	**64,257**	**9,548**	**4,124**	**13,672**	**1,668**
Rest of State	**65,853**	**8,522**	**2,827**	**11,349**	**1,354**
Cities	**32,285**	**4,996**	**1,780**	**6,776**	**830**
Villages	**11,086**	**1,138**	**382**	**1,520**	**202**
Towns	**19,498**	**2,205**	**655**	**2,860**	**305**
Institutional Districts	**2,984**	**183**	**10**	**193**	**17**
ALBANY COUNTY	**2,641**	**303**	**120**	**423**	**63**
Albany, city	1,745	182	70	252	38
Cohoes, city	292	48	22	70	11
Watervliet, city	180	24	15	39	5
Green Island, village	59	10	3	13	2
Other villages	34	4	......	4	1
Towns	331	35	10	45	6
ALLEGANY COUNTY	**520**	**37**	**13**	**50**	**7**
Wellsville, village	90	4	1	5	1
Other villages	147	6	4	10	2
Towns	283	27	8	35	4
BROOME COUNTY	**1,683**	**225**	**77**	**302**	**36**
Binghamton, city	816	124	41	165	23
—Binghamton State Hospital	231	......	......	......	....
Endicott, village	114	33	9	42	5
Johnson City, village	135	35	8	43	4
Union, village	12	......	......	......	....
Other villages	58	1	2	3	....
Towns	317	32	17	49	4
CATTARAUGUS COUNTY	**994**	**131**	**39**	**170**	**11**
Olean, city	295	47	11	58	2
Salamanca, city	112	22	8	30	1
Gowanda, village*	36	7	......	7	....
Other villages	179	12	5	17	2
Towns	372	43	15	58	6
CAYUGA COUNTY	**897**	**89**	**24**	**113**	**16**
Auburn, city	489	59	19	78	14
—Auburn State Prison	5	......	......	......	....
Villages	105	4	2	6	1
Towns	298	26	3	29	1
CHAUTAUQUA COUNTY	**1,463**	**179**	**68**	**247**	**33**
Dunkirk, city	222	42	13	55	16
Jamestown, city	480	62	22	84	8
Falconer, village	13	3	......	3	1
Fredonia, village	81	8	6	14	1
Silver Creek, village	36	3	2	5	1
Westfield, village	47	10	3	13	....
Other villages	125	9	3	12	3
Towns	459	42	19	61	3
CHEMUNG COUNTY	**874**	**100**	**37**	**137**	**15**
Elmira, city	621	73	28	101	11
— Elmira State Reformatory	1	......	......	......	....
Elmira Heights, village	28	6	2	8	1
Other villages	38	2	2	4	....
Towns	186	19	5	24	3
CHENANGO COUNTY	**587**	**43**	**12**	**55**	**9**
Norwich, city	152	14	4	18	2
Villages	125	8	3	11	2
Towns	276	21	5	26	5
—Women's Relief Corps Home, Oxford	34	......	......	......	....

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* Gowanda, village is located in two counties, Cattaraugus and Erie. No deaths were reported

stillbirths), by counties, according to age of decedent: **1921**

AGE OF —

10–14 years	15–19 years	Total 5–19 years	20–29 years	30–39 years	40–49 years	Total 20–49 years	50–59 years	60 years and over	Age not stated
2,066	2,569	7,657	7,994	9,879	12,565	30,438	16,776	50,182	36
1,135	1,383	4,186	4,577	5,702	7,211	17,490	9,235	19,674	......
931	1,186	3,471	3,417	4,177	5,354	12,948	7,541	30,508	36
518	623	1,971	1,743	2,236	2,879	6,858	3,903	12,677	10
150	160	512	527	579	755	1,861	1,193	5,996	4
242	358	905	941	1,022	1,251	3,214	1,994	10,594	21
21	45	83	206	340	469	1,015	451	1,241	1
26	47	136	137	185	246	568	331	1,181	2
15	28	81	111	135	175	421	230	761	......
3	9	23	8	24	18	50	41	106	2
4	2	11	5	8	25	38	20	72	......
......	3	5	2	3	7	12	9	20	......
......	1	2	1	1	1	3	2	23	......
4	4	14	10	14	20	44	29	199	......
3	5	15	15	22	33	70	60	325	......
......	1	2	7	8	5	20	14	49	......
2	1	5	1	4	10	15	18	99	......
1	3	8	7	10	18	35	28	177	......
19	25	80	81	125	154	360	213	727	1
10	13	46	38	65	79	182	104	319	......
......	......	......	7	19	35	61	47	123	......
1	1	7	8	6	8	22	13	30	......
3	5	12	5	9	10	24	14	41	1
......	......	......	......	1	3	4	2	6	......
1	......	1	1	2	5	8	4	42	......
4	6	14	22	23	14	59	29	166	......
15	14	40	56	50	76	182	92	510	......
3	5	10	19	23	35	77	33	117	......
2	8	6	6	4	10	20	12	44	......
......	2	2	4	2	2	8	3	16	......
2	2	6	6	4	9	19	16	121	......
8	2	16	21	17	20	58	28	212	......
14	15	45	37	32	54	123	104	511	1
8	12	34	26	19	36	81	59	237	......
......	......	......	2	2	......	4	......	1	......
1	......	2	3	2	8	13	9	75	......
5	3	9	6	9	10	25	36	198	1
15	32	80	74	67	96	237	149	746	4
3	2	21	9	13	24	46	29	71	......
9	17	34	38	29	29	96	51	214	1
1	......	2	......	......	3	3	2	3	......
1	2	4	1	1	3	5	4	54	......
......	2	3	3	......	......	3	3	22	......
......	......	......	2	4	2	8	6	20	......
1	2	6	4	1	6	11	13	83	......
......	7	10	17	19	29	65	41	279	3
6	12	33	34	45	73	152	109	443	......
5	6	22	25	31	50	106	88	304	......
......	......	......	1	......	......	1	......	......	......
......	1	2	......	2	2	4	......	14	......
......	1	1	1	2	2	5	2	26	......
1	4	8	7	10	19	36	19	99	......
6	4	19	18	24	35	77	53	383	......
3	......	5	8	10	16	34	18	77	......
......	......	2	......	3	6	9	14	89	......
3	4	12	10	11	13	34	21	183	......
......	......	......	......	......	......	......	......	34	......

for that part located in Erie county.

Table 37 — STATE OF NEW YORK: *Deaths (exclusive of*

AREA	All deaths	DEATHS AT			
		Under 1 year	1–4 years	Total under 5 years	5–9 years
CLINTON COUNTY	**639**	**131**	**34**	**165**	**11**
Plattsburg, city	194	33	7	40	3
Villages	63	12	4	16	......
Towns	357	86	23	109	8
—Clinton Prison	10	......	......	......	......
—Dannemora State Hospital	15	......	......	......	......
COLUMBIA COUNTY	**556**	**42**	**11**	**53**	**10**
Hudson, city	189	20	7	27	8
—State Training School for Girls, Hudson	2	......	......	......	......
Chatham, village	25	1	......	1	......
Other villages	49	2	1	3	1
Towns	291	19	3	22	1
CORTLAND COUNTY	**406**	**32**	**5**	**37**	**11**
Cortland, city	202	22	3	25	7
Homer, village	50	1	......	1	......
Other villages	26	2	......	2	......
Towns	128	7	2	9	4
DELAWARE COUNTY	**622**	**61**	**21**	**82**	**11**
Sidney, village	43	7	......	7	......
Walton, village	66	4	3	7	1
Other villages	138	12	3	15	2
Towns	375	38	15	53	8
DUTCHESS COUNTY	**1,527**	**127**	**32**	**159**	**16**
Beacon, city	138	15	2	17	......
—Matteawan State Hospital	34	......	......	......	......
Poughkeepsie, city	426	51	15	66	7
Wappinger Falls, village	40	6	2	8	2
Other villages	116	8	3	11	......
Towns	468	47	10	57	7
—Hudson River State Hospital	305	......	......	......	......
ERIE COUNTY	**8,140**	**1,677**	**535**	**2,212**	**239**
Buffalo, city	6,362	1,241	453	1,694	204
—Buffalo State Hospital	185	2	......	2	......
Lackawanna, city	156	76	18	94	6
—Our Lady of Victory Infant Home, Lackawanna	194	160	6	166	2
Tonawanda, city	76	9	4	13	6
Depew, village	49	18	4	22	1
East Aurora, village	44	4	1	5	......
Hamburg, village	40	4	......	4	1
Lancaster, village	56	13	3	16	2
Kenmore, village	17	3	3	6	1
Other villages	150	25	13	38	3
Towns	743	122	30	152	13
—Gowanda State Hospital	68	......	......	......	......
ESSEX COUNTY	**503**	**68**	**21**	**89**	**13**
Villages	177	21	4	25	7
Towns	321	47	17	64	6
—Raybrook Hospital for Incipient Tuberculosis	5	......	......	......	......
FRANKLIN COUNTY	**769**	**120**	**37**	**157**	**11**
Malone, village	154	29	7	36	5
Saranac Lake, village*	180	2	1	3	......
Saranac Lake	**252**	**7**	**3**	**10**	**2**
Other villages	52	9	5	14	1
Towns	383	80	24	104	5
FULTON COUNTY	**637**	**58**	**21**	**79**	**14**
Gloversville, city	343	29	14	43	11
Johnstown, city	140	10	3	13	2
Villages	20	2	......	2	......
Towns	134	17	4	21	1

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* Saranac Lake, village is located in two counties, Essex and Franklin. This total represents blackface type.

stillbirths), by counties, according to age of decedent: **1921** — (Continued)

Age of —									
10–14 years	15–19 years	Total 5–19 years	20–29 years	30–39 years	40–49 years	Total 20–49 years	50–59 years	60 years and over	Age not stated
6	9	26	33	34	39	106	57	285	....
3	4	10	14	15	13	42	23	79	....
1	1	2	1	3	5	9	4	32	....
2	3	13	9	10	17	36	29	170	....
....	1	1	5	2	2	9	......	......	....
....	......	......	4	4	2	10	1	4	....
10	7	27	19	25	30	74	54	347	1
5	3	16	6	13	15	34	17	94	1
1	1	2	......	......	......	......	......	......	....
1	1	2	......	......	1	1	4	17	....
1	......	2	2	1	2	5	5	34	....
2	2	5	11	11	12	34	28	202	....
4	4	19	11	15	28	54	38	258	....
2	1	10	7	12	16	35	24	108	....
....	......	......	1	1	1	3	2	44	....
1	......	1	......	......	2	2	3	18	....
1	3	8	3	2	9	14	9	88	....
8	12	31	30	23	26	79	72	358	....
1	1	2	2	2	2	6	3	25	....
....	......	1	1	2	4	7	14	37	....
....	2	4	7	5	5	17	13	89	....
7	9	24	20	14	15	49	42	207	....
15	16	47	69	95	137	301	213	806	1
....	1	1	8	10	15	33	18	68	1
....	......	......	6	4	6	16	11	7	....
4	6	17	7	24	31	62	59	222	....
....	......	2	1	2	......	3	9	18	....
3	1	4	1	1	10	12	7	82	....
8	8	23	33	23	28	84	50	254	....
....	......	......	13	31	47	91	59	155	....
123	189	551	511	597	711	1,819	950	2,607	1
104	158	466	442	479	582	1,503	767	1,932	....
....	2	2	8	23	34	65	32	83	1
1	2	9	5	13	12	30	14	9	....
3	1	6	4	5	6	15	5	2	....
2	2	10	3	4	5	12	8	33	....
3	......	4	2	4	5	11	2	10	....
....	......	......	......	3	1	4	3	32	....
....	1	2	3	......	2	5	7	22	....
1	......	3	4	3	......	7	4	26	....
....	......	1	......	......	1	1	1	8	....
....	3	6	2	3	8	13	19	74	....
9	20	42	37	48	49	134	75	340	....
....	......	......	1	12	6	19	13	36	....
7	15	35	46	40	41	127	46	205	1
3	9	19	29	18	14	61	17	55	....
4	5	15	14	22	26	62	29	150	1
....	1	1	3	......	1	4	......	......	....
14	23	48	112	89	63	264	60	239	1
4	4	13	13	12	10	35	16	54	....
2	6	8	69	50	27	146	10	12	1
3	10	15	90	64	35	189	18	19	1
1	2	4	4	......	3	7	2	25	....
7	11	23	26	27	23	76	32	148	....
9	11	34	28	29	42	99	84	340	1
4	7	22	14	19	23	56	48	174	....
1	1	4	6	4	13	23	16	84	....
1	......	1	1	......	1	2	1	14	....
3	3	7	7	6	5	18	19	68	1

that part of the village located in Franklin county. The total for the entire village is shown in

Table 37 — STATE OF NEW YORK: *Deaths (exclusive of*

AREA	All deaths	DEATHS AT			
		Under 1 year	1–4 years	Total under 5 years	5–9 years
GENESEE COUNTY	**558**	**87**	**21**	**108**	**18**
Batavia, city	242	42	7	49	8
LeRoy, village	50	6	3	9	3
Other villages	50	10	2	12	1
Towns	216	29	9	38	6
GREENE COUNTY	**415**	**37**	**13**	**50**	**5**
Catskill, village	62	4	4	8	3
Other villages	55	4	2	6	......
Towns	298	29	7	36	2
HAMILTON COUNTY	**53**	**9**	**1**	**10**	......
Towns	53	9	1	10	......
HERKIMER COUNTY	**833**	**103**	**32**	**135**	**26**
Little Falls, city	146	27	2	29	2
Dolgeville, village*	23	3	......	3	......
Frankfort, village	42	10	4	14	1
Herkimer, village	128	20	11	31	11
Ilion, village	114	8	2	10	1
Mohawk, village	37	3	......	3	3
Other villages	54	8	3	11	2
Towns	289	24	10	34	6
JEFFERSON COUNTY	**1,130**	**168**	**32**	**200**	**13**
Watertown, city	483	89	19	108	2
Carthage, village	47	7	......	7	4
Other villages	246	31	6	37	3
Towns	354	41	7	48	4
LEWIS COUNTY	**311**	**31**	**15**	**46**	**1**
Lowville, village	44	4	1	5	......
Other villages	64	5	4	9	......
Towns	203	22	10	32	1
LIVINGSTON COUNTY	**542**	**62**	**17**	**79**	**15**
Avon, village	29	5	4	9	1
Dansville, village	65	6	3	9	1
Mt. Morris, village	35	11	1	12	2
Other villages	77	2	2	4	5
Towns	232	36	7	43	5
—Craig Colony for Epileptics, Sonyea	104	2	......	2	1
MADISON COUNTY	**579**	**63**	**19**	**82**	**6**
Oneida, city	149	17	3	20	2
Canastota, village	52	4	7	11	......
Other villages	118	9	4	13	......
Towns	260	33	5	38	4
MONROE COUNTY	**4,421**	**612**	**231**	**843**	**115**
Rochester, city	3,516	546	207	753	106
—Rochester State Hospital	147	......	......	......	......
Brockport, village	51	3	2	5	2
East Rochester, village	36	5	1	6	......
Fairport, village	48	6	......	6	......
Other villages	89	7	2	9	2
Towns	534	45	19	64	5
MONTGOMERY COUNTY	**755**	**96**	**25**	**121**	**13**
Amsterdam, city	415	70	19	89	11
Fort Plain, village	43	2	1	3	1
Other villages	122	12	......	12	1
Towns	175	12	5	17	......

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* Dolgeville, village, is located in two counties, Fulton and Herkimer. No deaths were

stillbirths), by counties, according to age of decedent: 1921 — (Continued)

AGE OF —									
10-14 years	15-19 years	Total 5-19 years	20-29 years	30-39 years	40-49 years	Total 20-49 years	50-59 years	60 years and over	Age not stated
7	9	34	17	32	45	94	50	272	....
3	2	13	12	18	20	50	26	104	....
....	1	4	3	1	5	9	5	23	....
2	1	4	......	3	4	7	4	23	....
2	5	13	2	10	16	28	15	122	....
5	5	15	19	16	26	61	44	245	....
....	......	3	4	2	2	8	8	35	....
....	......	......	1	1	1	3	6	40	....
5	5	12	14	13	23	50	30	170	....
1	3	4	2	6	5	13	8	18	....
1	3	4	2	6	5	13	8	18	....
16	9	51	50	49	69	168	87	392	....
3	4	9	11	7	19	37	14	57	....
....	1	1	1	1	2	4	3	12	....
1	......	2	2	2	4	8	5	13	....
5	1	17	8	8	7	23	12	45	....
4	1	6	6	10	10	26	19	53	....
....	......	3	......	2	2	4	3	24	....
1	......	3	4	......	......	4	7	29	....
2	2	10	18	19	25	62	24	159	....
12	15	40	49	54	69	172	107	611	....
6	11	19	28	32	37	97	59	200	....
2	......	6	1	4	2	7	4	23	....
1	1	5	8	6	11	25	20	159	....
3	3	10	12	12	19	43	24	229	....
4	6	11	11	14	12	37	30	187	....
1	......	1	......	......	2	2	7	29	....
....	2	2	3	1	2	6	6	41	....
3	4	8	8	13	8	29	17	117	....
11	25	51	43	30	37	110	54	248	....
....	1	2	1	1	......	2	3	13	....
1	1	3	5	1	4	10	6	37	....
1	......	3	2	......	1	3	2	15	....
1	......	6	2	1	3	6	7	54	....
1	6	12	9	10	15	34	21	122	....
7	17	25	24	17	14	55	15	7	....
5	9	20	13	37	37	87	51	339	....
....	3	5	5	14	20	39	14	71	....
1	3	4	3	5	3	11	2	24	....
1	......	1	2	6	3	11	8	85	....
3	3	10	3	12	11	26	27	159	....
60	91	266	224	325	363	912	544	1,856	....
46	73	225	171	235	286	692	438	1,408	....
....	2	2	8	22	19	49	32	64	....
1	1	4	2	......	4	6	4	32	....
1	......	1	2	2	4	8	2	19	....
2	......	2	......	5	2	7	5	28	....
3	3	8	......	4	2	6	9	57	....
7	12	24	41	57	46	144	54	248	....
10	7	30	29	40	60	129	93	382	....
5	5	21	14	27	35	76	59	170	....
1	1	3	......	......	3	3	3	31	....
2	1	4	7	6	7	20	11	75	....
2	......	2	8	7	15	30	20	106	....

reported for that part located in Fulton county.

Table 37 — STATE OF NEW YORK: *Deaths* (*exclusive of*

AREA	All deaths	DEATHS AT			
		Under 1 year	1–4 years	Total under 5 years	5–9 years
NASSAU COUNTY	**1,413**	**191**	**61**	**252**	**29**
Glen Cove, city	78	13	7	20	......
Cedarhurst, village	16	1	......	1	......
Freeport, village	99	9	6	15	3
Lawrence, village	14	1	......	1	1
Hempstead, village	50	7	1	8	1
Lynbrook, village	57	4	2	6	......
Rockville Center, village	79	13	1	14	2
Mineola, village	146	11	6	17	3
Other villages	125	14	4	18	2
Towns	749	118	34	152	17
NIAGARA COUNTY	**1,485**	**262**	**96**	**358**	**44**
Lockport, city	286	41	6	47	5
Niagara Falls, city	623	141	66	207	23
North Tonawanda, city	182	34	13	47	5
La Salle, village	27	3	4	7	3
Other villages	47	5	......	5	3
Towns	320	38	7	45	5
ONEIDA COUNTY	**2,741**	**383**	**192**	**575**	**76**
Rome, city	453	50	28	78	22
—Rome Custodial Asylum	62	6	2	8	5
Utica, city	1,291	223	130	353	34
—Utica State Hospital	135	......	......	......	......
Sherrill, city	13	1	2	3	......
Whitesboro, village	31	6	1	7	......
Other villages	223	16	5	21	3
Towns	533	81	24	105	12
ONONDAGA COUNTY	**3,071**	**454**	**147**	**601**	**91**
Syracuse, city	2,138	355	111	466	69
—State Institution for Feeble-Minded, Syracuse	2	......	......	......	......
Baldwinsville, village	50	4	2	6	1
East Syracuse, village	40	8	3	11	2
Solvay, village	61	11	9	20	2
Other villages	174	12	6	18	4
Towns	606	64	16	80	13
ONTARIO COUNTY	**870**	**93**	**32**	**125**	**10**
Canandaigua, city	176	24	9	33	3
Geneva, city	190	35	11	46	3
Villages	192	13	4	17	1
Towns	312	21	8	29	3
ORANGE COUNTY	**1,801**	**210**	**79**	**289**	**36**
Middletown, city	285	33	20	53	4
—Middletown State Hospital	121	1	......	1	......
Newburgh, city	433	47	14	61	11
Port Jervis, city	212	30	10	40	9
Goshen, village	35	5	......	5	1
Highland Falls, village	24	1	1	2	1
Walden, village	43	9	2	11	1
Other villages	116	14	5	19	2
Towns	532	70	27	97	7
ORLEANS COUNTY	**389**	**46**	**10**	**56**	**8**
Albion, village	88	12	2	14	1
Medina, village	86	8	5	13	4
Other villages	24	4	1	5	......
Towns	191	22	2	24	3
OSWEGO COUNTY	**1,090**	**139**	**28**	**167**	**15**
Fulton, city	179	22	7	29	2
Oswego, city	332	59	7	66	5
Villages	135	5	4	9	......
Towns	444	53	10	63	8

stillbirths), by counties, according to age of decedent: 1921 — (Continued)

AGE OF —									
10–14 years	15–19 years	Total 5–19 years	20–29 years	30–39 years	40–49 years	Total 20–49 years	50–59 years	60 years and over	Age not stated
26	**23**	**78**	**84**	**83**	**141**	**308**	**163**	**612**	....
1	......	1	3	3	10	16	11	30	....
....	1	1	......	......	......	......	4	10	....
....	......	3	1	4	9	14	7	60	....
....	......	1	1	......	3	4	1	7	....
2	......	3	3	4	2	9	6	24	....
2	1	3	1	2	6	9	4	35	....
....	2	4	6	3	8	17	6	38	....
11	4	18	12	24	16	52	21	38	....
1	2	5	5	8	13	26	17	59	....
9	13	39	52	35	74	161	86	311	....
31	**25**	**100**	**96**	**115**	**121**	**332**	**149**	**545**	**1**
8	3	16	12	22	23	57	26	140	....
15	10	48	44	52	54	150	60	158	....
5	4	14	16	15	12	43	23	55	....
....	......	3	3	2	......	5	2	10	....
....	1	4	2	4	2	8	5	25	....
3	7	15	19	20	30	69	33	157	1
39	**61**	**176**	**121**	**153**	**211**	**485**	**293**	**1,212**	....
6	14	42	17	29	36	82	48	203	....
6	7	18	11	13	5	29	6	1	....
18	27	79	58	76	98	232	144	483	....
....	1	1	3	5	29	37	25	72	....
....	2	2	......	......	......	......	1	7	....
....	......	......	2	2	......	4	3	17	....
3	2	8	6	8	17	31	22	141	....
6	8	26	24	20	26	70	44	288	....
64	**40**	**195**	**131**	**203**	**254**	**588**	**360**	**1,327**	....
51	34	154	89	162	197	448	271	799	....
1	......	1	......	1	......	1	......	......	....
1	......	2	......	......	2	2	5	35	....
....	......	2	1	......	1	2	5	20	....
1	2	5	5	4	3	12	5	19	....
1	......	5	6	5	6	17	20	114	....
9	4	26	30	31	45	106	54	340	....
11	**15**	**36**	**38**	**42**	**61**	**141**	**107**	**459**	**2**
3	3	9	7	9	10	26	15	92	1
4	2	9	9	6	17	32	27	76	....
....	2	3	8	13	17	38	25	108	1
4	8	15	14	14	17	45	40	183	....
34	**32**	**102**	**78**	**124**	**182**	**384**	**212**	**814**	....
8	2	14	13	16	32	61	25	132	....
....	......	......	1	12	16	29	17	74	....
8	9	28	22	38	53	113	52	179	....
5	3	17	16	12	18	46	26	83	....
....	......	1	1	3	5	9	9	11	....
....	......	1	......	1	6	7	3	11	....
1	1	3	1	2	4	7	3	19	....
....	4	6	6	4	8	18	10	63	....
12	13	32	18	36	40	94	67	242	....
4	**8**	**20**	**16**	**16**	**17**	**49**	**45**	**219**	....
2	......	3	3	4	5	12	10	49	....
....	2	6	6	2	4	12	11	44	....
....	1	1	1	3	......	4	5	9	....
2	5	10	6	7	8	21	19	117	....
11	**22**	**48**	**48**	**61**	**57**	**166**	**109**	**599**	**1**
2	3	7	11	8	17	36	16	90	1
1	9	15	15	24	19	58	40	153	....
1	1	2	1	4	5	10	14	100	....
7	9	24	21	25	16	62	39	256	....

Table 37 — STATE OF NEW YORK: *Deaths (exclusive of*

AREA	All deaths	DEATHS AT			
		Under 1 year	1–4 years	Total under 5 years	5–9 years
OTSEGO COUNTY	787	58	20	78	12
Oneonta, city	199	18	5	23	4
Cooperstown, village	56	5	1	6	2
Other villages	118	7	......	7	....
Towns	414	28	14	42	6
PUTNAM COUNTY	146	16	3	19	2
Villages	39	3	2	5	1
Towns	107	13	1	14	1
RENSSELAER COUNTY	1,755	180	85	265	22
Rensselaer, city	114	16	4	20	1
Troy, city	1,161	134	70	204	12
Hoosick Falls, village	56	6	3	9	....
Other villages	33	1	2	3	2
Towns	391	23	6	29	7
ROCKLAND COUNTY	616	49	27	76	18
Haverstraw, village	51	4	2	6	....
Nyack, village	106	7	3	10	2
Spring Valley, village	20	3	1	4	....
Suffern, village	55	4	4	8	1
Other villages	74	6	4	10	3
Towns	279	25	11	36	4
—Letchworth Village, Thiells	27	......	1	1	7
—Hospital for Crippled and Deformed Children, West Haverstraw	4	......	1	1	1
ST. LAWRENCE COUNTY	1,348	202	35	237	17
Ogdensburg, city	296	60	6	66	6
—St. Lawrence State Hospital	160	......	......	......	....
Canton, village	45	4	......	4	....
Gouverneur, village	51	5	2	7	....
Massena, village	57	11	3	14	....
Potsdam, village	74	15	1	16	....
Other villages	79	10	1	11	3
Towns	586	97	22	119	8
SARATOGA COUNTY	860	89	46	135	12
Saratoga Springs, city	270	15	10	25	5
Mechanicville, city	82	12	8	20	1
Ballston Spa, village	55	1	2	3	1
Waterford, village	36	4	1	5	1
Other villages	91	15	3	18	2
Towns	326	42	22	64	2
SCHENECTADY COUNTY	1,101	142	50	192	16
Schenectady, city	883	118	41	159	12
Scotia, village	28	3	1	4	1
Towns	190	21	8	29	3
SCHOHARIE COUNTY	313	21	2	23	6
Villages	93	5	......	5	2
Towns	220	16	2	18	4
SCHUYLER COUNTY	240	11	2	13	6
Watkins, village	60	3	......	3	1
Other villages	36	2	......	2	1
Towns	144	6	2	8	4
SENECA COUNTY	555	40	3	43	3
Seneca Falls, village	95	14	2	16	1
Waterloo, village	55	6	......	6	....
Other villages	21	......	......	......	....
Towns	149	20	1	21	2
—Willard State Hospital	235	......	......	......	....

stillbirths), by counties, according to age of decedent: **1921 — (Continued)**

AGE OF —									
10–14 years	15–19 years	Total 5–19 years	20–29 years	30–39 years	40–49 years	Total 20–49 years	50–59 years	60 years and over	Age not stated
6	**9**	**27**	**30**	**45**	**41**	**116**	**73**	**492**	**1**
2	4	10	14	22	21	57	19	90	......
2	......	4	......	7	4	11	7	28	......
......	1	1	1	2	5	8	11	91	......
2	4	12	15	14	11	40	36	283	1
1	**3**	**6**	**5**	**6**	**9**	**20**	**18**	**83**	......
1	1	3	1	2	4	7	1	23	......
......	2	3	4	4	5	13	17	60	......
30	**21**	**73**	**91**	**117**	**147**	**355**	**224**	**838**	......
1	......	2	2	1	12	15	11	66	......
18	13	43	51	82	96	229	170	515	......
1	......	1	1	1	6	8	9	29	......
......	......	2	1	3	2	6	3	19	......
10	8	25	36	30	31	97	31	209	......
16	**22**	**56**	**35**	**41**	**44**	**120**	**78**	**286**	......
2	1	3	4	4	3	11	12	19	......
......	5	7	5	12	13	30	17	42	......
2	......	2	1	......	4	5	......	9	......
3	1	5	1	6	3	10	10	22	......
2	2	7	2	4	5	11	7	39	......
5	6	15	16	13	14	43	30	155	......
1	6	14	6	2	2	10	2	......	......
1	9	3	......	......	......	......	......	......	......
15	**24**	**56**	**55**	**59**	**92**	**206**	**148**	**700**	**1**
7	7	20	22	20	19	61	33	116	......
......	1	1	5	14	18	37	26	96	......
......	......	......	......	......	2	2	8	31	......
......	......	......	4	1	3	8	3	33	......
......	1	1	4	1	3	8	3	31	......
......	2	2	3	......	3	6	9	41	......
......	2	5	4	4	2	10	6	47	......
8	11	27	13	19	42	74	60	305	1
10	**18**	**40**	**34**	**56**	**76**	**166**	**102**	**417**	......
6	6	17	11	15	29	55	40	133	......
......	1	2	3	2	5	10	12	38	......
......	......	1	1	5	5	11	9	31	......
......	......	1	2	6	7	15	3	12	......
2	2	6	5	4	6	15	8	44	......
2	9	13	12	24	24	60	30	159	......
17	**26**	**59**	**57**	**82**	**98**	**237**	**152**	**461**	......
15	20	47	39	64	81	184	128	365	......
......	1	2	2	......	4	6	4	12	......
2	5	10	16	18	13	47	20	84	......
2	**3**	**11**	**12**	**7**	**11**	**30**	**26**	**223**	......
1	......	3	3	......	5	8	13	64	......
1	3	8	9	7	6	22	13	159	......
3	**3**	**12**	**7**	**7**	**12**	**26**	**19**	**170**	......
1	......	2	3	......	6	9	7	39	......
......	......	1	1	4	1	6	3	24	......
2	3	9	3	3	5	11	9	107	......
3	**6**	**12**	**18**	**40**	**49**	**107**	**74**	**319**	......
2	2	5	1	3	3	7	12	55	......
1	......	1	3	5	8	16	6	26	......
......	......	......	......	1	3	4	7	10	......
......	4	6	9	8	2	19	14	89	......
......	......	......	5	23	33	61	35	139	......

Table 37 — STATE OF NEW YORK: *Deaths (exclusive of*

AREA	All deaths	DEATHS AT			
		Under 1 year	1–4 years	Total under 5 years	5–9 years
STEUBEN COUNTY	1,233	114	33	147	7
Corning, city	177	24	6	30	1
Hornell, city	227	29	5	34	......
Bath, village	65	5	......	5	1
Other villages	183	10	4	14	1
Towns	456	46	18	64	4
—Soldiers' and Sailors' Home, Bath	120	......	......	......	......
SUFFOLK COUNTY	2,148	147	52	199	36
Amityville, village	113	2	3	5	4
Babylon, village	54	6	1	7	1
Greenport, village	53	12	1	13	......
Patchogue, village	41	6	......	6	1
Sag Harbor, village	38	3	3	6	......
Southampton, village	80	8	4	12	2
Other villages	53	2	1	3	......
Towns	979	101	39	140	28
—Central Islip State Hospital	457	2	......	2	......
—Kings Park State Hospital	280	5	......	5	......
SULLIVAN COUNTY	581	41	12	53	6
Villages	143	5	1	6	......
Towns	438	36	11	47	6
TIOGA COUNTY	415	30	11	41	10
Owego, village	82	8	3	11	4
Waverly, village	72	7	1	8	1
Other villages	68	3	1	4	1
Towns	193	12	6	18	4
TOMPKINS COUNTY	535	51	12	63	6
Ithaca, city	268	28	8	36	3
Villages	58	3	......	3	......
Towns	209	20	4	24	3
ULSTER COUNTY	1,144	102	34	136	21
Kingston, city	465	42	9	51	12
Ellenville, village	42	2	2	4	1
Saugerties, village	55	8	1	9	......
Other villages	53	4	1	5	......
Towns	528	46	21	67	8
—Eastern New York Reformatory, Napanoch	1	......	......	......	......
WARREN COUNTY	469	49	10	59	7
Glens Falls, city	267	33	3	36	5
Villages	7	......	......	......	......
Towns	195	16	7	23	2
WASHINGTON COUNTY	621	55	19	74	5
Fort Edward, village	52	6	2	8	......
Granville, village	42	5	1	6	......
Hudson Falls, village	79	7	4	11	1
Whitehall, village	65	8	1	9	2
Other villages	97	6	2	8	1
Towns	285	23	9	32	1
—Great Meadow Prison, Comstock	1	......	......	......	......
WAYNE COUNTY	640	59	16	75	10
Clyde, village	33	5	1	6	......
Lyons, village	70	6	4	10	1
Newark, village	83	5	2	7	1
Other villages	99	6	2	8	1
Towns	339	35	7	42	6
—Newark State Custodial Asylum	16	2	......	2	1

stillbirths), by counties, according to age of decedent: 1921 — (Continued)

AGE OF —									
10–14 years	15–19 years	Total 5–19 years	20–29 years	30–39 years	40–49 years	Total 20–49 years	50–59 years	60 years and over	Age not stated
17	9	33	47	70	83	200	133	720	......
3	......	4	11	18	15	44	23	76	......
4	2	6	12	10	19	41	41	105	......
1	......	2	6	5	3	14	11	33	......
2	2	5	4	11	11	26	16	127	......
7	5	16	14	26	35	75	41	260	......
......	......	......	......	......	......	......	1	119	......
21	31	89	141	199	297	637	272	952	......
1	2	7	5	8	11	24	14	63	......
......	3	4	6	5	5	16	4	23	......
1	......	1	3	1	3	7	9	23	......
......	......	1	1	3	8	12	2	20	......
......	......	......	2	2	1	5	6	21	......
2	2	6	6	8	7	21	10	31	......
1	1	2	2	2	2	6	8	34	......
16	20	64	41	49	74	164	97	514	......
......	2	2	47	83	123	253	69	131	......
......	1	1	28	38	63	129	53	92	......
7	23	36	91	84	69	244	44	204	......
1	4	5	31	32	26	89	13	30	......
6	19	31	60	52	43	155	31	174	......
4	3	17	11	9	14	34	35	288	......
2	......	6	......	1	7	8	7	50	......
......	......	1	4	2	3	9	5	49	......
......	1	2	2	2	1	5	6	51	......
2	2	8	5	4	3	12	17	138	......
6	4	16	26	29	36	91	54	311	......
2	2	7	16	18	20	54	33	138	......
......	......	......	3	1	3	7	3	45	......
4	2	9	7	10	13	30	18	128	......
24	27	72	85	69	93	247	130	559	......
17	10	39	48	30	42	120	59	196	......
......	......	1	1	......	4	5	3	29	......
......	1	1	4	2	6	12	8	25	......
1	......	1	3	......	4	7	6	34	......
6	16	30	28	37	37	102	54	275	......
......	......	......	1	......	......	1	......	......	......
9	9	25	17	21	36	74	63	246	2
7	5	17	9	10	22	41	39	133	1
......	......	......	2	......	......	2	2	3	......
2	4	8	6	11	14	31	22	110	1
6	8	19	18	30	39	87	90	351	......
......	......	......	3	3	3	9	11	24	......
......	1	1	2	2	2	6	9	20	......
1	......	2	1	5	7	13	9	44	......
1	1	4	1	4	4	9	10	33	......
1	2	4	1	4	5	10	17	58	......
3	4	8	10	12	18	40	34	171	......
......	......	......	......	......	......	......	......	1	......
9	12	31	30	30	40	100	59	375	......
......	1	1	2	1	......	3	3	20	......
3	1	5	1	3	7	11	7	37	......
......	......	1	5	7	8	20	6	49	......
1	1	3	2	4	6	12	15	61	......
4	8	18	15	12	16	43	28	208	......
1	1	3	5	3	3	11	......	......	......

Table 37 — State of New York (*exclusive of*

AREA	All deaths	DEATHS AT			
		Under 1 year	1–4 years	Total under 5 years	5–9 years
Westchester County	**3,756**	**525**	**180**	**705**	**76**
Mount Vernon, city	406	65	21	86	6
New Rochelle, city	301	45	12	57	12
Ossining, village	138	19	3	22	5
—Sing Sing Prison	17	......	......	......	....
Peekskill, village	187	22	8	30	3
White Plains, city	241	32	9	41	6
Port Chester, village	190	22	11	33	7
Yonkers, city	961	160	64	224	18
Bronxville, village	35	6	1	7	1
Dobbs Ferry, village	58	14	......	14	....
Hastings-on-Hudson, village	40	6	8	14	2
Irvington, village	19	......	1	1	....
Mamaroneck, village	59	9	5	14	....
Mount Kisco, village	55	10	......	10	2
North Tarrytown, village	37	4	6	10	....
Pleasantville, village	29	......	......	......	....
Rye, village	44	3	1	4	1
Tarrytown, village	80	9	2	11	3
Scarsdale, village	9	......	......	......	....
Tuckahoe, village	27	5	2	7	....
Other villages	105	11	6	17	2
Towns	712	80	20	100	8
—State Reformatory for Women, Bedford	6	3	......	3	....
Wyoming County	**421**	**48**	**11**	**59**	**6**
Perry, village	66	10	3	13	....
Warsaw, village	66	3	1	4	1
Other villages	94	5	2	7	....
Towns	195	30	5	35	5
Yates County	**254**	**24**	**6**	**30**	**3**
Penn Yan, village	85	7	4	11	....
Other villages	38	3	1	4	....
Towns	131	14	1	15	3

stillbirths), by counties, according to age of decedent: **1921 — (Concluded)**

AGE OF —

10-14 years	15-19 years	Total 5-19 years	20-29 years	30-39 years	40-49 years	Total 20-49 years	50-59 years	60 years and over	Age not stated
66	**71**	**213**	**199**	**265**	**392**	**856**	**494**	**1,474**	**14**
6	5	17	18	31	44	93	43	167	....
5	6	23	21	20	27	68	40	113	....
3	1	9	2	5	9	16	19	72	....
....	....	....	6	4	5	15	2	....	....
6	6	15	5	11	17	33	26	83	....
6	5	17	10	15	28	53	23	107	....
2	3	12	10	20	23	53	25	67	....
19	22	50	61	83	115	259	135	282	2
1	....	2	1	4	4	9	5	12	....
2	1	3	3	6	3	12	7	22	....
....	1	3	1	1	3	5	2	16	....
....	1	1	2	....	2	4	....	13	....
2	2	4	3	3	4	10	8	23	....
1	1	4	2	....	5	7	8	26	....
....	....	....	2	4	1	7	5	15	....
....	1	1	....	3	2	5	6	17	....
3	....	4	....	1	6	7	4	25	....
5	2	10	1	4	7	12	14	33	....
....	1	1	1	....	1	2	1	5	....
....	1	1	....	....	7	7	4	8	....
....	1	3	4	7	10	21	11	52	1
5	11	24	44	42	69	155	106	316	11
....	....	....	2	1	....	3	....	....	....
4	**6**	**16**	**22**	**11**	**15**	**48**	**41**	**257**	....
1	2	3	5	4	3	12	2	36	....
1	1	3	2	4	4	10	8	41	....
1	....	1	3	1	3	7	12	67	....
1	3	9	12	2	5	19	19	113	....
4	**3**	**10**	**6**	**3**	**10**	**19**	**21**	**174**	....
....	2	2	2	1	6	9	5	58	....
....	....	....	....	....	....	....	6	28	....
4	1	8	4	2	4	10	10	88	....

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	All deaths	DEATHS			
			EPIDEMIC, INFECTIOUS AND OTHER			
			Typhoid fever 1	Small-pox 6	Measles 7	Scarlet fever 8
1	**STATE OF NEW YORK**	130,110	377	1	412	666
2	**New York City**	64,257	123	....	165	385
3	**Rest of State**	65,853	254	1	247	281
4	**Cities**	32,285	142	1	134	186
5	**Villages**	11,086	42	....	35	38
6	**Towns**	19,498	64	....	78	56
7	**Institutional Districts**	2,984	6	....	....	1
8	ALBANY COUNTY	2,641	8	....	7	5
9	Albany, city	1,745	5	....	2	3
10	Cohoes, city	292	2	....	1	1
11	Watervliet, city	180	1	....	....	....
12	Green Island, village	59	....	....	1	1
13	Other villages	34	....	....	....	....
14	Towns	331	....	....	3	....
15	ALLEGANY COUNTY	520	6	....	1	2
16	Wellsville, village	90	1	....	....	....
17	Other villages	147	....	....	....	....
18	Towns	283	5	....	1	2
19	BROOME COUNTY	1,683	4	....	11	8
20	Binghamton, city	816	3	....	3	5
21	—Binghamton State Hospital	231	....	....	....	....
22	Endicott, village	114	....	....	1	2
23	Johnson City, village	135	1	....	2	....
24	Union, village	12	....	....	....	....
25	Other villages	58	....	....	1	....
26	Towns	317	....	....	4	1
27	CATTARAUGUS COUNTY	994	3	....	1	3
28	Olean, city	295	1	....	....	1
29	Salamanca, city	112	....	....	1	2
30	Gowanda, village*	36	....	....	....	....
31	Other villages	179	2	....	....	....
32	Towns	372	....	....	....	....
33	CAYUGA COUNTY	897	4	....	....	3
34	Auburn, city	489	3	....	....	3
35	—Auburn State Prison	5	....	....	....	....
36	Villages	105	....	....	....	....
37	Towns	298	1	....	....	....
38	CHAUTAUQUA COUNTY	1,463	4	....	4	5
39	Dunkirk, city	222	2	....	....	3
40	Jamestown, city	480	1	....	2	....
41	Falconer, village	13	....	....	....	....
42	Fredonia, village	81	....	....	....	1
43	Silver Creek, village	36	....	....	....	....
44	Westfield, village	47	....	....	2	....
45	Other villages	125	1	....	....	....
46	Towns	459	....	....	....	1
47	CHEMUNG COUNTY	874	6	....	2	4
48	Elmira, city	621	6	....	1	3
49	—Elmira State Reformatory	1	....	....	....	....
50	Elmira Heights, village	28	....	....	....	....
51	Other villages	38	....	....	....	....
52	Towns	186	....	....	1	1
53	CHENANGO COUNTY	587	2	....	....	3
54	Norwich, city	152	....	....	....	....
55	Villages	125	1	....	....	1
56	Towns	276	1	....	....	2
57	—Woman's Relief Corps Home, Oxford	34	....	....	....	....

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* Gowanda village is located in two counties, Cattaraugus and Erie. No deaths were reported

stillbirths) from important causes, by counties: 1921

FROM —									
GENERAL DISEASES					TUBERCULOSIS 31–37				Line number
Whooping cough 9	Diphtheria 10	Influenza 11	Cerebrospinal meningitis 24	Acute anterior poliomyelitis 22	Total all forms 31–37	Pulmonary and acute miliary 31, 37c	Tuberculous meningitis 32	Other forms 33–37a, b	
756	1,702	778	176	266	10,775	9,407	630	738	1
350	891	384	147	143	5,922	5,143	383	396	2
406	811	394	29	123	4,853	4,264	247	342	3
241	579	121	22	46	2,026	1,671	172	183	4
49	74	85	4	28	772	690	20	62	5
109	151	180	3	51	1,604	1,481	51	72	6
7	7	8	......	......	451	422	4	25	7
20	31	17	......	......	199	169	14	16	8
7	21	11	......	......	137	116	8	13	9
3	4	2	......	......	26	22	2	2	10
5	3	2	......	......	13	11	2	....	11
1	......	1	......	......	4	4	....	....	12
....	1	......	......	......	3	3	....	....	13
4	2	1	......	......	16	13	2	1	14
3	6	7	......	......	14	13	....	1	15
....	......	......	......	......	6	5	....	1	16
....	1	2	......	......	2	2	....	....	17
3	5	5	......	......	6	6	....	....	18
3	16	13	......	2	120	103	6	11	19
1	13	6	......	......	47	37	6	4	20
....	......	2	......	......	18	16	....	2	21
1	......	......	......	1	5	4	....	1	22
....	1	......	......	......	7	5	....	2	23
....	......	......	......	......	1	1	....	....	24
1	......	1	......	1	1	1	....	....	25
....	2	4	......	......	41	39	....	2	26
4	6	6	......	2	58	50	2	6	27
3	2	1	......	1	10	7	1	2	28
....	......	......	......	......	6	5	1	....	29
....	......	......	......	......	2	2	....	....	30
....	1	2	......	......	6	5	....	1	31
1	3	3	......	1	34	31	....	3	32
2	15	5	......	1	48	37	6	5	33
......	14	......	......	......	36	29	4	3	34
....	......	......	......	......	1	1	....	....	35
1	......	......	......	......	4	3	....	1	36
1	1	5	......	1	7	4	2	1	37
3	20	12	1	2	82	71	5	6	38
....	8	2	1	......	12	8	1	3	39
2	7	2	......	......	34	30	3	1	40
....	......	......	......	......	......	....	....	....	41
....	......	......	......	1	3	3	....	....	42
....	......	......	......	......	2	1	1	....	43
....	......	1	......	......	4	4	....	....	44
1	2	1	......	......	3	1	....	2	45
....	3	6	......	1	24	24	....	....	46
3	6	5	......	......	45	38	1	6	47
2	4	4	......	......	22	16	1	5	48
....	......	......	......	......	1	1	....	....	49
....	......	......	......	......	3	3	....	....	50
....	......	......	......	......	1	1	....	....	51
1	2	1	......	......	18	17	....	1	52
2	4	3	......	2	22	17	....	5	53
1	2	1	......	1	3	1	....	2	54
....	......	......	......	......	4	2	....	2	55
1	2	2	......	1	14	13	....	1	56
....	......	......	......	......	1	1	....	....	57

for that part located in Erie county.

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	All deaths	DEATHS			
			EPIDEMIC, INFECTIOUS AND OTHER			
			Typhoid fever 1	Smallpox 6	Measles 7	Scarlet fever 8
58	**CLINTON COUNTY**	**639**	**2**	....	....	**7**
59	Plattsburg, city	194	1	....	....	1
60	Villages	63	....	....	....	....
61	Towns	357	1	....	....	6
62	—Clinton Prison	10	....	....	....	....
63	—Dannemora State Hospital	15	....	....	....	....
64	**COLUMBIA COUNTY**	**556**	....	....	....	**1**
65	Hudson, city	189	....	....	....	....
66	—State Training School for Girls, Hudson	2	....	....	....	....
67	Chatham, village	25	....	....	....	....
68	Villages	49	....	....	....	1
69	Towns	291	....	....	....	....
70	**CORTLAND COUNTY**	**406**	**3**	....	....	....
71	Cortland, city	202	2	....	....	....
72	Homer, village	50	1	....	....	....
73	Other villages	26	....	....	....	....
74	Towns	128	....	....	....	....
75	**DELAWARE COUNTY**	**622**	**1**	....	**6**	....
76	Sidney, village	43	....	....	....	....
77	Walton, village	66	....	....	....	....
78	Other villages	138	....	....	1	....
79	Towns	375	1	....	5	....
80	**DUTCHESS COUNTY**	**1,527**	**5**	....	**1**	**3**
81	Beacon, city	138	1	....	1	1
82	—Matteawan State Hospital	34	....	....	....	....
83	Poughkeepsie, city	426	3	....	....	....
84	Wappinger Falls, village	40	....	....	....	....
85	Other villages	116	....	....	....	1
86	Towns	468	1	....	....	1
87	—Hudson River State Hospital	305	....	....	....	....
88	**ERIE COUNTY**	**8,140**	**31**	**1**	**36**	**64**
89	Buffalo, city	6,362	22	1	27	59
90	—Buffalo State Hospital	185	....	....	....	....
91	Lackawanna, city	156	....	....	....	....
92	—Our Lady of Victory Infant Home, Lackawanna	194	4	....	....	....
93	Tonawanda, city	76	1	....	....	....
94	Depew, village	49	....	....	....	....
95	East Aurora, village	44	....	....	....	....
96	Hamburg, village	40	....	....	....	....
97	Lancaster, village	56	....	....	....	2
98	Kenmore, village	17	....	....	....	....
99	Other villages	150	1	....	....	....
100	Towns	743	3	....	9	3
101	—Gowanda State Hospital	68	....	....	....	....
102	**ESSEX COUNTY**	**503**	....	....	**3**	**2**
103	Villages	177	....	....	....	1
104	Towns	321	....	....	3	1
105	—Raybrook State Hospital for Incipient Tuberculosis	5	....	....	....	....
106	**FRANKLIN COUNTY**	**769**	**6**	....	**10**	**2**
107	Malone, village	154	2	....	2	....
108	Saranac Lake, village*	180	....	....	1	....
109	*Saranac Lake*	252	....	....	1	1
110	Other villages	52	....	....	3	....
111	Towns	383	4	....	4	2

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* Saranac Lake village is located in two counties, Essex and Franklin. This total represents that

stillbirths) from important causes, by counties: **1921 — (Continued)**

FROM—									Line number
GENERAL DISEASES					TUBERCULOSIS 31–37				
Whooping cough 9	Diphtheria 10	Influenza 11	Cerebrospinal meningitis 24	Acute anterior poliomyelitis 22	Total all forms 31–37	Pulmonary and acute miliary 31, 37	Tuberculous meningitis 32	Other forms 33–37 a, b	
1	7	6	......	1	46	38	1	7	58
......	3	1	......	......	11	7	1	3	59
1	......	......	......	......	3	3	......	......	60
......	4	5	......	1	17	14	......	3	61
......	......	......	......	......	7	6	......	1	62
......	......	......	......	......	8	8	......	......	63
......	2	7	......	2	33	27	4	2	64
......	1	2	......	1	11	7	3	1	65
......	......	......	......	......	1	1	......	......	66
......	......	1	......	......	1	1	......	......	67
......	1	1	......	1	2	1	......	1	68
......	......	3	......	......	18	17	1	......	69
2	4	4	......	......	11	8	1	2	70
1	3	1	......	......	6	4	1	1	71
......	......	2	......	......	2	2	......	......	72
......	......	......	......	......	1	1	......	......	73
1	1	1	......	......	2	1	......	1	74
1	4	12	......	4	36	28	3	5	75
......	......	1	......	......	4	2	......	2	76
......	......	1	......	......	3	3	......	......	77
......	......	2	......	2	12	8	1	3	78
1	4	8	......	2	17	15	2	......	79
6	9	5	......	2	152	135	7	10	80
1	......	......	......	1	9	8	......	1	81
......	......	......	......	......	9	7	......	2	82
......	7	1	......	......	21	15	5	1	83
......	......	......	......	......	3	3	......	......	84
......	......	1	......	......	5	5	......	......	85
5	2	3	......	1	44	38	2	4	86
......	......	......	......	......	61	59	......	2	87
108	171	15	3	9	654	574	40	40	88
80	148	6	3	5	554	487	33	34	89
......	2	......	......	......	23	23	......	......	90
10	......	1	......	2	7	5	2	......	91
6	4	1	......	......	1	......	1	......	92
......	1	......	......	1	8	7	......	1	93
......	3	1	......	......	1	1	......	......	94
......	......	......	......	......	......	......	......	......	95
......	......	......	......	......	2	2	......	......	96
2	1	......	......	......	1	1	......	......	97
......	......	1	......	......	......	......	......	......	98
3	2	2	......	......	5	3	1	1	99
7	10	3	......	1	44	38	3	3	100
......	......	......	......	......	8	7	......	1	101
1	......	5	1	2	82	79	3	......	102
......	......	1	......	1	58	56	2	......	103
1	......	4	1	1	19	18	1	......	104
......	......	......	......	......	5	5	......	......	105
2	3	19	......	1	199	190	4	5	106
......	2	2	......	......	9	5	2	2	107
......	......	......	......	......	151	150	......	1	108
......	......	......	......	1	199	196	2	1	109
......	......	4	......	......	5	5	......	......	110
2	1	13	......	1	34	30	2	2	111

part of the village located in Franklin county. The total for entire village is shown in blackface type.

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	All deaths	DEATHS			
			EPIDEMIC, INFECTIOUS AND OTHER			
			Typhoid fever 1	Small-pox 6	Measles 7	Scarlet fever 8
112	FULTON COUNTY	637	1	....	1	6
113	Gloversville, city	343	1	....	....	6
114	Johnstown, city	140	....	....	....	....
115	Villages	20	....	....	....	....
116	Towns	134	....	....	1	....
117	GENESEE COUNTY	558	2	....	....	....
118	Bataiva, city	242	1	....	....	....
119	LeRoy, village	50	....	....	....	....
120	Other villages	50	....	....	....	....
121	Towns	216	1	....	....	....
122	GREENE COUNTY	415	3	....	2	....
123	Catskill, village	62	1	....	....	....
124	Other villages	55	1	....	....	....
125	Towns	298	1	....	2	....
126	HAMILTON COUNTY	53	....	....	....	....
127	Towns	53	....	....	....	....
128	HERKIMER COUNTY	833	6	....	2	4
129	Little Falls, city	146	3	....	....	2
130	Dolgeville, village†	23	....	....	....	....
131	Frankfort, village	42	....	....	....	....
132	Herkimer, village	128	1	....	2	....
133	Ilion, village	114	1	....	....	....
134	Mohawk, village	37	....	....	....	1
135	Other villages	54	....	....	....	....
136	Towns	289	1	....	....	1
137	JEFFERSON COUNTY	1,130	5	....	7	3
138	Watertown, city	483	2	....	3	3
139	Carthage, village	47	1	....	1	....
140	Other villages	246	....	....	1	....
141	Towns	354	2	....	2	....
142	LEWIS COUNTY	311	2	....	1	2
143	Lowville, village	44	....	....	....	1
144	Other villages	64	....	....	1	....
145	Towns	203	2	....	....	1
146	LIVINGSTON COUNTY	542	2	....	....	2
147	Avon, village	29	....	....	....	....
148	Dansville, village	65	....	....	....	....
149	Mt. Morris, village	35	....	....	....	....
150	Other villages	77	....	....	....	....
151	Towns	232	2	....	....	2
152	—Craig Colony for Epileptics, Sonyea	104	....	....	....	....
153	MADISON COUNTY	579	3	....	1	1
154	Oneida, city	149	1	....	....	....
155	Canastota, village	52	....	....	1	....
156	Other villages	118	1	....	....	1
157	Towns	260	1	....	....	....
158	MONROE COUNTY	4,421	12	....	2	30
159	Rochester, city	3,516	9	....	2	24
160	—Rochester State Hospital	147	....	....	....	....
161	Brockport, village	51	....	....	....	....
162	East Rochester, village	36	....	....	....	....
163	Fairport, village	48	....	....	....	....
164	Other villages	89	2	....	....	....
165	Towns	534	1	....	....	6

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† Dolgeville, village, is located in two counties, Fulton and Herkimer. This total represents that face type.

stillbirths) from important causes, by counties : 1921 —(Continued)

FROM —									
GENERAL DISEASES					TUBERCULOSIS 31–37				Line number
Whooping cough 9	Diphtheria 10	Influenza 11	Cerebro-spinal meningitis 24	Acute anterior poliomyelitis 22	Total all forms 31–37	Pulmonary and acute miliary 31, 37c	Tuberculous meningitis 32	Other forms 33–37a, b	
5	5	7	1	......	33	31	1	1	112
1	5	6	......	......	12	11	......	1	113
2	......	......	1	......	7	6	1	......	114
......	......	1	......	......	2	2	......	......	115
2	......	......	......	......	12	12	......	......	116
6	7	11	......	1	18	17	......	1	117
1	2	3	......	......	6	6	......	......	118
......	1	1	......	......	3	3	......	......	119
2	1	......	......	......	1	1	......	......	120
3	3	7	......	1	8	7	......	1	121
3	4	4	......	2	36	29	2	5	122
......	1	1	......	......	7	5	......	2	123
......	1	......	......	......	2	2	......	......	124
3	2	3	......	2	27	22	2	3	125
......	......	......	......	......	5	5	......	......	126
......	......	......	......	......	5	5	......	......	127
4	11	1	......	11	52	45	4	3	128
......	......	......	......	......	4	3	1	......	129
......	......	......	......	11	2	2	......	......	130
2	1	......	......	1	5	3	1	1	131
......	6	......	......	1	6	4	1	1	132
......	......	1	......	1	3	3	......	......	133
......	......	......	......	......	1	......	......	1	134
2	......	......	......	3	2	2	......	......	135
......	4	......	......	4	29	28	1	......	136
4	......	9	......	5	47	42	......	5	137
2	......	1	......	3	27	26	......	1	138
......	......	1	......	1	......	......	......	......	139
......	......	4	......	......	11	8	......	3	140
2	......	3	......	1	9	8	......	1	141
1	2	2	......	2	18	13	2	3	142
......	1	......	......	......	1	......	......	1	143
......	......	1	......	......	5	4	......	1	144
1	1	1	......	2	12	9	2	1	145
7	5	7	......	......	28	23	......	5	146
2	......	......	......	......	2	2	......	......	147
......	......	......	......	......	......	......	......	......	148
1	......	......	......	......	......	......	......	......	149
......	3	3	......	......	......	......	......	......	150
4	2	4	......	......	6	5	......	1	151
......	......	......	......	......	20	16	......	4	152
1	4	......	......	......	25	17	2	6	153
......	1	......	......	......	6	3	2	1	154
......	1	......	......	......	2	1	......	1	155
......	......	......	......	......	7	4	......	3	156
1	2	......	......	......	10	9	......	1	157
47	88	11	......	2	323	279	17	27	158
41	78	4	......	1	190	149	16	25	159
......	......	1	......	......	17	17	......	......	160
3	1	......	......	......	2	2	......	......	161
......	1	......	......	......	1	1	......	......	162
......	......	1	......	......	1	1	......	......	163
......	3	1	......	......	1	1	......	......	164
3	5	4	......	1	111	108	1	2	165

part of the village located in Herkimer county. The total for the entire village is shown in black-

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	All deaths	DEATHS			
			EPIDEMIC, INFECTIOUS AND OTHER			
			Typhoid fever 1	Small-pox 6	Measles 7	Scarlet fever 8
166	MONTGOMERY COUNTY	755	....	....	....	....
167	Amsterdam, city	415	....	....	....	....
168	Fort Plain, village	43	....	....	....	....
169	Other villages	122	....	....	....	....
170	Towns	175	....	....	....	....
171	NASSAU COUNTY	1,413	5	....	5	2
172	Glen Cove, city	78	....	....	2	....
173	Cedarhurst, village	16	....	....	....	....
174	Freeport, village	99	....	....	....	....
175	Lawrence, village	14	....	....	....	....
176	Hempstead, village	50	....	....	....	....
177	Lynbrook, village	57	....	....	....	....
178	Rockville Center, village	79	....	....	....	....
179	Mineola, village	146	3	....	....	....
180	Other villages	125	1	....	1	....
181	Towns	749	1	....	2	2
182	NIAGARA COUNTY	1,485	9	....	10	12
183	Lockport, city	286	1	....	2	....
184	Niagara Falls, city	623	5	....	8	10
185	North Tonawanda, city	182	3	....	....	....
186	La Salle, village	27	....	....	....	2
187	Other villages	47	....	....	....	....
188	Towns	320	....	....	....	....
189	ONEIDA COUNTY	2,741	11	....	36	3
190	Rome, city	453	1	....	7	....
191	—Rome Custodial Asylum	62	....	....	....	....
192	Utica, city	1,291	7	....	27	1
193	—Utica State Hospital	135	1	....	....	....
194	Sherrill, city	13	....	....	....	....
195	Whitesboro, village	31	....	....	....	....
196	Other villages	223	1	....	1	1
197	Towns	533	1	....	1	1
198	ONONDAGA COUNTY	3,071	10	....	7	24
199	Syracuse, city	2,138	7	....	6	13
200	—State Institution for Feeble Minded Children, Syracuse	2	....	....	....	....
201	Baldwinsville, village	50	....	....	1	....
202	East Syracuse, village	40	....	....	....	....
203	Solvay, village	61	....	....	....	7
204	Other villages	174	....	....	....	1
205	Towns	606	3	....	....	3
206	ONTARIO COUNTY	870	1	....	....	1
207	Canandaigua, city	176	....	....	....	....
208	Geneva, city	190	1	....	....	1
209	Villages	192	....	....	....	....
210	Towns	312	....	....	....	....
211	ORANGE COUNTY	1,801	5	....	10	8
212	Middletown, city	285	....	....	4	1
213	—Middletown State Hospital	121	....	....	....	....
214	Newburgh, city	433	1	....	....	2
215	Port Jervis, city	212	1	....	2	1
216	Goshen, village	35	....	....	....	1
217	Highland Falls, village	24	1	....	....	....
218	Walden, village	43	....	....	....	....
219	Other villages	116	....	....	....	1
220	Towns	532	2	....	4	2
221	ORLEANS COUNTY	389	1	....	....	2
222	Albion, village	88	....	....	....	....
223	Medina, village	86	....	....	....	....
224	Other villages	24	1	....	....	1
225	Towns	191	....	....	....	1

stillbirths) from important causes, by counties: **1921 — (Continued)**

FROM—									
GENERAL DISEASES					TUBERCULOSIS 31–37				
Whooping cough 9	Diphtheria 10	Influenza 11	Cerebrospinal meningitis 24	Acute anterior poliomyelitis	Total all forms 31–37	Pulmonary and acute miliary 31, 37c	Tuberculous meningitis 32	Other forms 33–37 a, b	Line number
1	5	3	1	1	48	42	3	3	166
......	5	2	......	......	22	19	2	1	167
......	......	1	......	......	2	......	1	1	168
1	......	......	......	1	8	7	......	1	169
......	......	......	1	......	16	16	......	......	170
10	9	10	1	4	97	81	6	10	171
1	1	8	......	......	1	1	......	......	172
......	......	......	......	......	......	......	......	......	173
1	......	......	1	......	4	4	......	......	174
......	......	......	......	......	......	......	......	......	175
......	1	1	......	......	2	2	......	......	176
......	......	1	......	1	2	2	......	......	177
......	1	......	......	......	2	2	......	......	178
......	1	......	......	......	4	1	1	2	179
......	......	......	......	......	8	5	......	3	180
8	5	5	......	3	74	64	5	5	181
10	46	8	4	......	97	84	6	7	182
2	7	1	......	......	14	13	......	1	183
5	25	4	4	......	28	18	6	4	184
1	10	1	......	......	10	10	......	......	185
......	2	......	......	......	1	1	......	......	186
2	......	......	......	......	1	1	......	......	187
......	2	2	......	......	43	41	......	2	188
11	59	12	1	31	134	161	12	11	189
......	19	......	......	3	46	42	1	3	190
......	......	......	......	......	30	29	1	......	191
5	32	7	1	12	52	39	9	4	192
......	......	......	......	......	14	14	......	......	193
......	2	......	......	......	......	......	......	......	194
......	1	......	......	1	......	......	......	......	195
2	1	1	......	6	10	9	......	1	196
4	4	4	......	9	32	28	1	3	197
26	95	6	......	3	198	163	18	17	198
19	77	1	......	2	122	92	15	15	199
......	......	......	......	......	1	1	......	......	200
......	......	1	......	......	......	......	......	......	201
2	1	......	......	......	......	......	......	......	202
1	3	......	......	......	3	3	......	......	203
......	3	......	......	......	7	4	2	1	204
4	11	4	......	1	65	63	1	1	205
6	7	6	......	1	55	52	......	3	206
1	1	1	......	......	4	4	......	......	207
3	5	......	......	1	13	11	......	2	208
......	......	3	......	......	10	9	......	1	209
2	1	2	......	......	28	28	......	......	210
13	13	20	1	3	127	109	10	8	211
6	3	4	......	1	14	12	1	1	212
......	......	......	......	......	14	14	......	......	213
1	3	......	......	1	42	35	3	4	214
1	2	7	......	......	6	5	......	1	215
......	......	......	......	......	2	2	......	......	216
......	1	......	......	......	1	1	......	......	217
......	......	......	......	......	2	1	1	......	218
1	......	1	......	......	7	6	......	1	219
4	4	8	1	1	39	33	5	1	220
3	1	2	......	1	20	18	......	2	221
......	......	......	......	......	5	4	......	1	222
1	......	......	......	......	5	5	......	......	223
......	......	......	......	......	......	......	......	......	224
2	1	2	......	1	10	9	......	1	225

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	All deaths	DEATHS			
			EPIDEMIC, INFECTIOUS AND OTHER			
			Typhoid fever 1	Small-pox 6	Measles 7	Scarlet fever 8
226	**OSWEGO COUNTY**	**1,090**	**3**	......	**1**	**1**
227	Fulton, city	179	2	......	......	......
228	Oswego, city	332	1	......	......	......
229	Villages	135	......	......	......	......
230	Towns	444	......	......	1	1
231	**OTSEGO COUNTY**	**787**	**4**	......	**4**	**1**
232	Oneonta, city	199	1	......	1	1
233	Cooperstown, village	56	......	......	1	......
234	Other villages	118	1	......	......	......
235	Towns	414	2	......	2	......
236	**PUTNAM COUNTY**	**146**	......	......	......	......
237	Villages	39	......	......	......	......
238	Towns	107	......	......	......	......
239	**RENSSELAER COUNTY**	**1,755**	**8**	......	**13**	**2**
240	Rensselaer, city	114	......	......	......	......
241	Troy, city	1,161	7	......	11	2
242	Hoosick Falls, village	56	......	......	......	......
243	Other villages	33	......	......	......	......
244	Towns	391	1	......	2	......
245	**ROCKLAND COUNTY**	**616**	......	......	**2**	......
246	Haverstraw, village	51	......	......	......	......
247	Nyack, village	106	......	......	......	......
248	Spring Valley, village	20	......	......	......	......
249	Suffern, village	55	......	......	......	......
250	Other villages	74	......	......	......	......
251	Towns	279	......	......	2	......
252	—Letchworth Village, Thiells	27	......	......	......	......
253	—Hospital for Crippled and Deformed Children, West Haverstraw	4	......	......	......	......
254	**ST. LAWRENCE COUNTY**	**1,348**	**13**	......	**5**	**2**
255	Ogdensburg, city	296	3	......	1	......
256	—St. Lawrence State Hospital	160	......	......	......	1
257	Canton, village	45	......	......	......	......
258	Gouverneur, village	51	4	......	1	......
259	Massena, village	57	2	......	1	......
260	Potsdam, village	74	......	......	......	......
261	Other villages	79	......	......	......	......
262	Towns	586	4	......	2	1
263	**SARATOGA COUNTY**	**860**	......	......	**16**	**4**
264	Saratoga Springs, city	270	......	......	1	2
265	Mechanicville, city	82	......	......	5	2
266	Ballston Spa, village	55	......	......	......	......
267	Waterford, village	36	......	......	......	......
268	Other villages	91	......	......	......	......
269	Towns	326	......	......	10	......
270	**SCHENECTADY COUNTY**	**1,101**	**7**	......	**8**	**10**
271	Schenectady, city	883	5	......	8	10
272	Scotia, village	28	1	......	......	......
273	Towns	190	1	......	......	......
274	**SCHOHARIE COUNTY**	**313**	......	......	**1**	**2**
275	Villages	93	......	......	......	......
276	Towns	220	......	......	1	2
277	**SCHUYLER COUNTY**	**240**	......	......	......	......
278	Watkins, village	60	......	......	......	......
279	Other villages	36	......	......	......	......
280	Towns	144	......	......	......	......

stillbirths) from important causes, by counties: 1921 — (Continued)

FROM —									
GENERAL DISEASES					TUBERCULOSIS 31–37				Line number
Whooping cough 9	Diphtheria 10	Influenza 11	Cerebrospinal meningitis 24	Acute anterior poliomyelitis 22	Total all forms 31–37	Pulmonary and acute miliary 31, 37c	Tuberculous meningitis 32	Other forms 33–37a, b	
4	**11**	**6**	......	**4**	**64**	**59**	**2**	**3**	**226**
......	1	1	......	3	6	5	......	1	227
......	4	......	......	......	20	18	2	......	228
......	......	2	......	......	3	2	......	1	229
4	6	3	......	1	35	34	......	1	230
3	**2**	**6**	......	**5**	**25**	**19**	**2**	**4**	**231**
1	2	1	......	1	6	4	1	1	232
......	......	2	......	......	1	......	1	......	233
1	......	......	......	1	5	5	......	......	234
1	......	3	......	3	13	10	......	3	235
......	**2**	**2**	......	......	**7**	**6**	......	**1**	**236**
......	1	......	......	......	1	......	......	1	237
......	1	2	......	......	6	6	......	......	238
15	**12**	**11**	......	**1**	**132**	**113**	**13**	**6**	**239**
......	1	......	......	......	1	1	......	......	240
12	5	5	......	1	65	46	13	6	241
......	1	......	......	......	......	......	......	......	242
......	1	1	......	......	3	3	......	......	243
3	4	5	......	......	63	63	......	......	244
5	**7**	**6**	**1**	**1**	**54**	**51**	......	**3**	**245**
......	......	1	1	......	9	9	......	......	246
1	1	......	......	......	9	9	......	......	247
1	......	......	......	......	......	......	......	......	248
......	......	1	......	......	2	2	......	......	249
1	2	......	......	......	2	2	......	......	250
1	3	4	......	1	25	25	......	......	251
1	......	......	......	......	4	4	......	......	252
......	1	......	......	......	3	......	......	3	253
2	**9**	**14**	......	**2**	**72**	**64**	**6**	**2**	**254**
1	......	3	......	......	9	7	2	......	255
......	......	......	......	......	20	19	1	......	256
......	......	......	......	......	2	2	......	......	257
......	1	......	......	......	5	4	......	1	258
......	......	2	......	......	3	3	......	......	259
......	......	1	......	......	3	3	......	......	260
......	3	......	......	1	5	4	1	......	261
1	5	8	......	1	25	22	2	1	262
2	**3**	**3**	**1**	......	**72**	**65**	**2**	**5**	**263**
......	1	1	......	......	17	13	1	3	264
......	......	......	......	......	3	2	......	1	265
......	......	......	......	......	5	5	......	......	266
......	......	......	......	......	4	4	......	......	267
......	......	......	1	......	2	2	......	......	268
2	2	2	......	......	41	39	1	1	269
3	**14**	**6**	**3**	**1**	**87**	**69**	**6**	**12**	**270**
3	13	2	3	1	45	33	5	7	271
......	......	......	......	......	2	1	......	1	272
......	1	4	......	......	40	35	1	4	273
1	**1**	**2**	......	**1**	**12**	**11**	**1**	......	**274**
......	......	1	......	......	3	3	......	......	275
1	1	1	......	1	9	8	1	......	276
1	......	**1**	......	......	**8**	**8**	......	......	**277**
......	......	......	......	......	2	2	......	......	278
......	......	......	......	......	2	2	......	......	279
1	......	1	......	......	4	4	......	......	280

Table 38 — STATE OF NEW YORK: *Deaths* (*exclusive of*

Line number	AREA	All deaths	DEATHS			
			EPIDEMIC, INFECTIOUS AND OTHER			
			Typhoid fever 1	Small-pox 6	Measles 7	Scarlet fever 8
281	**SENECA COUNTY**	**555**	**6**	....	....	....
282	Seneca Falls, village	95	....	....	....	....
283	Waterloo, village	55	1	....	....	....
284	Other villages	21	....	....	....	....
285	Towns	149	4	....	....	....
286	—Willard State Hospital	235	1	....	....	....
287	**STEUBEN COUNTY**	**1,233**	**8**	....	....	**5**
288	Corning, city	177	1	....	....	3
289	Hornell, city	227	2	....	....	....
290	Bath, village	65	....	....	....	....
291	Other villages	188	1	....	....	2
292	Towns	456	4	....	....	....
293	—Soldiers' and Sailors' Home, Bath	120	....	....	....	....
294	**SUFFOLK COUNTY**	**2,148**	**6**	....	....	**6**
295	Amityville, village	113	....	....	....	....
296	Babylon, village	54	....	....	....	1
297	Greenport, village	53	....	....	....	....
298	Patchogue, village	41	....	....	....	....
299	Sag Harbor, village	38	....	....	....	....
300	Southampton, village	80	1	....	....	....
301	Other villages	53	....	....	....	....
302	Towns	979	5	....	....	5
303	—Central Islip State Hospital	457	....	....	....	....
304	—Kings Park State Hospital	280	....	....	....	....
305	**SULLIVAN COUNTY**	**581**	**2**	....	....	....
306	Villages	143	....	....	....	....
307	Towns	438	2	....	....	....
308	**TIOGA COUNTY**	**415**	**4**	....	**3**	**2**
309	Owego, village	82	1	....	....	....
310	Waverly, village	72	....	....	....	1
311	Other villages	68	....	....	....	....
312	Towns	193	3	....	3	1
313	**TOMPKINS COUNTY**	**535**	**3**	....	**1**	....
314	Ithaca, city	268	3	....	....	....
315	Villages	58	....	....	....	....
316	Towns	209	....	....	1	....
317	**ULSTER COUNTY**	**1,144**	**7**	....	....	**8**
318	Kingston, city	465	5	....	....	4
319	Ellenville, village	42	....	....	....	....
320	Saugerties, village	55	....	....	....	....
321	Other villages	53	....	....	....	....
322	Towns	528	2	....	....	4
323	—Eastern New York Reformatory — Napanoch	....	....	....	....	....
324	**WARREN COUNTY**	**469**	**2**	....	**4**	....
325	Glens Falls, city	267	2	....	1	....
326	Villages	7	....	....	....	....
327	Towns	195	....	....	3	....
328	**WASHINGTON COUNTY**	**621**	....	....	**8**	....
329	Fort Edward, village	52	....	....	1	....
330	Granville, village	42	....	....	1	....
331	Hudson Falls, village	79	....	....	2	....
332	Whitehall, village	65	....	....	....	....
333	Other villages	97	....	....	2	....
334	Towns	285	....	....	2	....
335	—Great Meadow Prison — Comstock	1	....	....	....	....

stillbirths) from important causes, by counties: 1921 — (Continued)

FROM—

GENERAL DISEASES					TUBERCULOSIS 31–37				Line number
Whooping cough 9	Diphtheria 10	Influenza 11	Cerebrospinal meningitis 24	Acute anterior poliomyelitis 22	Total all forms 31–37	Pulmonary and acute miliary 31, 37c	Tuberculous meningitis 32	Other forms 33–37a, b	
1	......	1	......	......	76	68	1	7	281
......	......	1	......	......	3	2	......	1	282
......	......	......	......	......	2	1	......	1	283
......	......	......	......	......	5	5	......	......	284
1	......	......	......	......	7	6	1	......	285
......	......	......	......	......	59	54	......	5	286
8	5	4	......	......	58	53	2	3	287
2	......	......	......	......	10	9	1	......	288
......	2	2	......	......	7	6	......	1	289
......	......	......	......	......	1	1	......	......	290
......	1	1	......	......	8	8	......	......	291
6	2	1	......	......	31	29	1	1	292
......	......	......	......	......	1	......	......	1	293
8	23	18	......	1	196	182	6	8	294
......	......	......	......	......	2	2	......	......	295
1	1	......	......	......	2	2	......	......	296
......	1	1	......	......	2	2	......	......	297
......	......	......	......	......	3	3	......	......	298
3	......	......	......	......	2	2	......	......	299
1	1	1	......	......	3	1	2	......	300
......	......	......	......	......	1	......	......	1	301
3	20	12	......	1	64	57	4	3	302
......	......	4	......	......	77	75	......	2	303
......	......	......	......	......	40	38	......	2	304
......	3	4	......	1	208	204	......	4	305
......	......	1	......	......	88	88	......	......	306
......	3	3	......	1	120	116	......	4	307
1	6	4	......	......	7	7	......	......	308
......	4	......	......	......	......	......	......	......	309
......	1	3	......	......	4	4	......	......	310
......	......	......	......	......	1	1	......	......	311
1	1	1	......	......	2	2	......	......	312
1	3	6	......	1	33	25	2	6	313
1	2	2	......	1	10	4	1	5	314
......	......	1	......	......	3	3	......	......	315
......	1	3	......	......	20	18	1	1	316
2	10	6	......	2	105	98	3	4	317
......	5	4	......	......	43	40	2	1	318
......	......	1	......	......	1	1	......	......	319
......	......	......	......	......	6	5	......	1	320
......	......	......	......	......	2	2	......	......	321
2	5	1	......	2	52	49	1	2	322
......	......	......	......	......	1	1	......	......	323
......	......	1	......	......	18	17	1	......	324
......	......	......	......	......	8	8	......	......	325
......	......	......	......	......	2	2	......	......	326
......	......	1	......	......	8	7	1	......	327
......	1	9	......	......	36	35	......	1	328
......	......	......	......	......	5	4	......	1	329
......	......	......	......	......	7	7	......	......	330
......	......	1	......	......	4	4	......	......	331
......	......	......	......	......	3	3	......	......	332
......	......	1	......	......	3	3	......	......	333
......	1	7	......	......	14	14	......	......	334
......	......	......	......	......	......	......	......	......	335

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	All deaths	DEATHS			
			EPIDEMIC, INFECTIOUS AND OTHER			
			Typhoid fever 1	Small-pox 6	Measles 7	Scarlet fever 8
336	WAYNE COUNTY	640	5	....	1	3
337	Clyde, village	33	....	....	....	....
338	Lyons, village	70	2	....	....	....
339	Newark, village	83	....	....	....	....
340	Other villages	99	2	....	1	....
341	Towns	339	1	....	....	3
342	—Newark State Custodial Asylum	16	....	....	....	....
343	WESTCHESTER COUNTY	3,756	12	....	18	23
344	Mt. Vernon, city	406	4	....	1	1
345	New Rochelle, city	301	2	....	1	1
346	Ossining, village	138	....	....	....	2
347	—Sing Sing Prison	17	....	....	....	....
348	Peekskill, village	187	....	....	2	....
349	White Plains city	241	1	....	....	....
350	Port Chester, village	190	1	....	5	2
351	Yonkers, city	961	4	....	1	10
352	Bronxville, village	35	....	....	....	....
353	Dobbs Ferry, village	58	....	....	....	....
354	Hastings-on-Hudson, village	40	....	....	1	1
355	Irvington, village	19	....	....	....	....
356	Mamaroneck, village	59	....	....	....	....
357	Mt. Kisco, village	55	....	....	....	1
358	No. Tarrytown, village	37	....	....	1	....
359	Pleasantville, village	29	....	....	....	....
360	Rye, village	44	....	....	....	....
361	Tarrytown, village	80	....	....	....	4
362	Scarsdale, village	9	....	....	....	....
363	Tuckahoe, village	27	....	....	....	....
364	Other villages	105	....	....	....	1
365	Towns	712	....	....	6	....
366	—State Reformatory for Women, Bedford	6	....	....	....	....
367	WYOMING COUNTY	421	1	....	1	....
368	Perry, village	66	1	....	....	....
369	Warsaw, village	66	....	....	....	....
370	Other villages	94	....	....	....	....
371	Towns	195	....	....	1	....
372	YATES COUNTY	254	....	....	....	....
373	Penn Yan, village	85	....	....	....	....
374	Other villages	38	....	....	....	....
375	Towns	131	....	....	....	....

stillbirths) from important causes, by counties: 1921 — (Continued)

FROM —									
GENERAL DISEASES					TUBERCULOSIS 31–37				Line number
Whooping cough 9	Diphtheria 10	Influenza 11	Cerebrospinal meningitis 24	Acute anterior poliomyelitis 23	Total all forms 31–37	Pulmonary and acute miliary 31, 37c	Tuberculous meningitis 32	Other forms 33–37a, b	
5	5	3	......	......	33	25	3	5	336
......	......	......	......	......	5	5	......	......	337
......	1	......	......	......	3	1	1	1	338
......	1	1	......	......	3	2	......	1	339
1	1	1	......	......	3	3	......	......	340
4	2	1	......	......	14	10	1	3	341
......	......	......	......	......	5	4	1	......	342
22	23	18	10	6	308	272	16	20	343
4	3	2	......	......	22	19	3	......	344
1	3	2	3	......	16	13	1	2	345
1	1	......	1	......	7	2	2	3	346
......	......	......	......	......	......	......	......	......	347
2	2	3	......	1	13	11	......	2	348
......	......	......	......	......	9	8	......	1	349
......	3	2	......	1	5	4	......	1	350
5	12	3	5	1	105	91	7	7	351
......	......	1	......	......	......	......	......	......	352
1	......	......	......	......	1	1	......	......	353
......	1	......	......	......	2	2	......	......	354
1	......	......	......	......	2	2	......	......	355
2	......	......	......	......	5	5	......	......	356
......	......	......	......	......	2	2	......	......	357
......	......	......	......	1	3	2	......	1	358
......	......	......	......	......	......	......	......	......	359
......	......	1	......	......	2	2	......	......	360
......	......	3	......	......	1	1	......	......	361
......	......	......	......	......	......	......	......	......	362
1	......	......	1	......	2	1	1	......	363
......	......	......	......	......	6	5	......	1	364
4	3	1	......	2	104	100	2	2	365
......	......	......	......	......	1	1	......	......	366
2	......	1	......	......	20	17	1	2	367
......	......	......	......	......	4	3	......	1	368
......	......	......	......	......	2	2	......	......	369
......	......	1	......	......	4	3	......	1	370
2	......	......	......	......	10	9	1	......	371
1	1	2	......	......	10	8	......	2	372
......	......	......	......	......	4	3	......	1	373
......	......	2	......	......	......	......	......	......	374
1	1	......	......	......	6	5	......	1	375

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM—				
		EPIDEMIC, INFECTIOUS AND OTHER GENERAL DISEASES — (*continued*)		Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM	
		Cancer 43–49	Diabetes 57		Organic heart disease 90	Arterio-sclerosis 91
1	**STATE OF NEW YORK**	11,163	2,220	7,148	22,093	4,655
2	**New York City**	5,573	1,120	886	12,005	2,699
3	**Rest of State**	5,590	1,100	6,262	10,088	1,956
4	**Cities**	2,891	609	2,671	4,560	718
5	**Villages**	1,025	182	1,295	1,700	366
6	**Towns**	1,585	299	2,182	3,271	613
7	**Institutional Districts**	89	10	114	557	259
8	ALBANY COUNTY	255	51	250	418	94
9	Albany, city	171	36	147	271	66
10	Cohoes, city	21	9	33	47	9
11	Watervliet, city	23	3	15	29	1
12	Green Island, village	4	......	7	8	......
13	Other villages	8	1	4	8	1
14	Towns	28	2	44	55	17
15	ALLEGANY COUNTY	48	9	44	101	23
16	Wellsville, village	14	2	5	15	2
17	Other villages	12	3	13	25	8
18	Towns	22	4	26	61	13
19	BROOME COUNTY	131	17	154	268	63
20	Binghamton, city	76	8	75	111	15
21	—Binghamton State Hospital	9	2	9	56	30
22	Endicott, village	7	2	10	13	3
23	Johnson City, village	11	2	6	12	1
24	Union, village	......	2	3	1	......
25	Other villages	3	......	10	18	2
26	Towns	25	1	41	57	12
27	CATTARAUGUS COUNTY	85	17	102	167	25
28	Olean, city	33	6	18	38	7
29	Salamanca, city	12	2	14	11	2
30	Gowanda, village*	4	2	3	3	1
31	Other villages	11	4	30	40	6
32	Towns	25	3	37	75	9
33	CAYUGA COUNTY	101	9	111	173	21
34	Auburn, city	50	6	57	77	4
35	—Auburn State Prison	2	......	......	......	......
36	Villages	16	1	18	22	......
37	Towns	33	2	36	74	17
38	CHAUTAUQUA COUNTY	108	26	136	236	32
39	Dunkirk, city	14	1	15	20	7
40	Jamestown, city	40	9	38	65	8
41	Falconer, village	2	......	1	1	......
42	Fredonia, village	7	......	7	15	1
43	Silver Creek, village	2	2	3	11	1
44	Westfield, village	5	......	8	4	......
45	Other villages	7	3	13	31	5
46	Towns	31	11	51	89	10
47	CHEMUNG COUNTY	77	23	73	138	19
48	Elmira, city	51	16	52	89	18
49	—Elmira State Reformatory	......	......	......	......	......
50	Elmira Heights, village	5	2	2	2	......
51	Other villages	5	1	4	9	......
52	Towns	16	4	15	38	1
53	CHENANGO COUNTY	48	17	78	115	29
54	Norwich, city	19	6	10	23	2
55	Villages	10	2	20	33	2
56	Towns	16	9	45	51	14
57	—Woman's Relief Corps Home, Oxford	3	......	3	8	11

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* Gowanda, village located in two counties, Cattaraugus and Erie. No deaths were reported

stillbirths) from important causes, by counties: 1921 — (Continued)

(*Continued*)

DISEASES OF THE RESPIRATORY SYSTEM				DISEASES OF THE DIGESTIVE SYSTEM				Nephritis and Bright's disease 128, 129	Line number
Bronchitis 99	Pneumonia 100, 101			Diarrhea and enteritis under 2 years 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122		
	Total all forms 100, 101	Broncho 100	Lobar and unqualified 101						
1,145	10,645	4,779	5,866	3,952	1,468	1,226	729	9,481	1
547	6,477	2,900	3,577	1,987	824	651	835	4,105	2
598	4,168	1,879	2,289	1,985	644	575	394	5,376	3
297	2,062	916	1,146	1,251	495	365	198	2,664	4
93	692	319	373	206	78	79	66	975	5
191	1,174	498	676	462	66	112	121	1,542	6
17	240	146	94	46	5	19	9	195	7
19	154	75	79	68	18	31	22	232	8
12	95	44	51	33	16	23	15	164	9
1	19	11	8	18	2	1	3	18	10
3	11	5	6	10	......	4	1	13	11
......	6	3	3	1	......	......	1	7	12
......	1	1	......	......	......	......	1	2	13
3	22	11	11	6	......	3	1	28	14
4	33	16	17	6	3	10	2	49	15
2	4	3	1	......	2	5	......	10	16
2	9	4	5	......	1	1	......	18	17
......	20	9	11	6	......	4	2	21	18
19	116	45	71	42	19	7	10	138	19
12	57	19	38	32	15	4	9	71	20
1	15	10	5	......	......	......	......	28	21
......	7	3	4	4	1	......	......	9	22
1	5	3	2	1	2	1	......	14	23
......	2	......	2	......	......	......	......	2	24
......	8	4	4	......	......	......	......	2	25
5	22	6	16	5	1	2	1	12	26
8	63	24	39	24	17	9	7	55	27
1	16	6	10	14	11	4	1	15	28
......	9	3	6	3	3	4	......	7	29
......	4	......	4	......	......	......	......	6	30
2	9	4	5	1	2	......	4	8	31
5	25	11	14	6	1	1	2	19	32
12	40	16	24	19	7	3	4	69	33
8	21	8	13	16	6	3	1	40	34
......	......	......	......	......	......	......	......	......	35
......	9	5	4	......	......	......	......	7	36
4	10	3	7	3	1	......	3	22	37
16	81	36	45	34	10	13	12	110	38
2	19	10	9	7	6	3	2	14	39
9	22	6	16	8	4	4	2	44	40
1	3	1	2	......	......	......	......	1	41
2	8	4	4	2	......	2	......	4	42
......	2	......	2	1	......	......	......	3	43
......	2	2	......	4	......	......	1	4	44
......	4	3	1	2	......	1	1	8	45
2	21	10	11	10	......	3	6	32	46
8	55	20	35	19	11	16	7	110	47
8	40	11	29	14	11	8	6	84	48
......	......	......	......	......	......	......	......	......	49
......	3	1	2	2	......	......	......	2	50
......	3	2	1	1	......	1	......	2	51
......	9	6	3	2	......	1	1	22	52
5	34	9	25	9	5	5	3	53	53
1	7	1	6	3	4	3	......	19	54
2	3	2	1	2	......	......	1	7	55
1	20	2	18	4	1	2	1	27	56
1	4	4	......	......	......	......	1	......	57

for that part located in Erie county.

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM				
		EPIDEMIC, INFECTIOUS AND OTHER GENERAL DISEASES — (*continued*)		Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM	
		Cancer 43–49	Diabetes 57		Organic heart disease 90	Arteriosclerosis 91
58	CLINTON COUNTY	35	5	49	99	15
59	Plattsburg, city	12	3	17	23	3
60	Villages	6	1	1	12	2
61	Towns	17	1	31	63	8
62	—Clinton Prison	....	....	....	....	....
63	—Dannemora Station Hospital	....	....	....	1	2
64	COLUMBIA COUNTY	47	10	72	84	28
65	Hudson, city	13	6	23	17	6
66	—State Training School for Girls, Hudson	....	....	....	....	....
67	Chatham, village	2	1	2	3	3
68	Villages	6	....	8	12	1
69	Towns	26	3	39	52	18
70	CORTLAND COUNTY	47	8	49	56	19
71	Cortland, city	22	4	25	21	6
72	Homer, village	8	1	5	7	5
73	Other villages	5	....	1	4	1
74	Towns	12	3	18	24	7
75	DELAWARE COUNTY	57	8	70	101	18
76	Sidney, village	5	....	9	8	2
77	Walton, village	8	....	8	10	....
78	Other villages	14	....	12	23	7
79	Towns	30	8	41	60	9
80	DUTCHESS COUNTY	134	23	150	235	111
81	Beacon, city	20	....	18	18	5
82	—Matteawan State Hospital	1	....	....	2	1
83	Poughkeepsie, city	43	9	64	72	22
84	Wappinger Falls, village	7	....	5	3	2
85	Other villages	13	4	12	23	3
86	Towns	45	8	42	72	22
87	—Hudson River State Hospital	5	2	9	45	56
88	ERIE COUNTY	643	131	551	1,002	208
89	Buffalo, city	530	115	422	777	143
90	—Buffalo State Hospital	7	1	12	28	10
91	Lackawanna, city	6	....	3	13	....
92	—Our Lady of Victory Infant Home, Lackawanna	4	....	....	3	....
93	Tonawanda, city	8	1	4	8	5
94	Depew, village	3	....	3	2	3
95	East Aurora, village	4	....	4	9	1
96	Hamburg, village	....	1	6	8	4
97	Lancaster, village	5	....	5	5	4
98	Kenmore, village	2	....	3	3	....
99	Other villages	15	....	25	16	12
100	Towns	56	13	60	112	24
101	—Gowanda State Hospital	3	....	4	18	2
102	ESSEX COUNTY	34	12	34	66	17
103	Villages	5	5	10	17	6
104	Towns	29	7	24	49	11
105	—Raybrook State Hospital for Incipient Tuberculosis	....	....	....	....	....
106	FRANKLIN COUNTY	38	10	49	71	11
107	Malone, village	14	1	6	18	....
108	Saranac Lake, village*	4	....	3	6	1
109	*Saranac Lake*	5	....	6	10	1
110	Other villages	2	....	7	4	3
111	Towns	18	9	33	43	7

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* Saranac Lake, village, is located in two counties, Essex and Franklin. This total represents that

stillbirths) from important causes, by counties: 1921 — (Continued)

(*Continued*)

DISEASES OF THE RESPIRATORY SYSTEM				DISEASES OF THE DIGESTIVE SYSTEM				Nephritis and Bright's disease 128, 129	Line number
Bronchitis 99	Pneumonia 100, 101								
	Total all forms 100, 101	Broncho 100	Lobar and unqualified 101	Diarrhea and enteritis under 2 years 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122		
8	**53**	**22**	**31**	**27**	**3**	**4**	**2**	**43**	58
5	12	3	9	1	3	1	1	15	59
....	7	5	2	1	......	1	......	7	60
3	33	14	19	25	......	2	1	21	61
....	1	......	1	....	......	....	......	....	62
....	......	......	......	....	......	....	......	....	63
3	**27**	**15**	**12**	**7**	**6**	**6**	......	**59**	64
....	12	7	5	4	4	4	......	18	65
....	......	......	......	....	......	....	......	....	66
....	1	1	......	....	......	....	......	4	67
....	2	1	1	....	1	....	......	4	68
3	12	6	6	3	1	2	......	33	69
6	**24**	**9**	**15**	**3**	**4**	**5**	**2**	**39**	70
3	16	7	9	2	4	5	1	21	71
1	......	......	......	....	......	....	......	3	72
....	1	......	1	....	......	....	......	1	73
2	7	2	5	1	......	....	1	14	74
5	**33**	**15**	**18**	**7**	**5**	**10**	**6**	**50**	75
....	......	......	......	....	......	1	......	1	76
....	3	2	1	....	......	1	1	8	77
3	9	2	7	4	1	4	......	13	78
2	21	11	10	3	4	4	5	28	79
16	**125**	**63**	**62**	**13**	**13**	**11**	**9**	**118**	80
....	13	3	10	1	......	2	1	15	81
....	4	2	2	....	......	....	......	5	82
5	25	11	14	9	4	3	......	38	83
....	1	......	1	2	1	....	......	3	84
2	10	3	7	....	1	1	2	12	85
9	39	16	23	1	7	4	2	34	86
....	33	28	5	....	......	1	4	11	87
103	**505**	**259**	**246**	**509**	**116**	**74**	**41**	**603**	88
79	370	186	184	395	111	66	28	460	89
....	25	16	9	....	......	1	2	15	90
3	18	15	3	18	1	1	2	5	91
7	12	6	6	42	2	....	......	1	92
2	7	3	4	2	......	....	1	4	93
....	9	5	4	3	......	1	......	1	94
1	2	1	1	....	......	....	......	12	95
1	3	1	2	2	......	....	......	10	96
2	5	2	3	1	......	....	......	10	97
....	1	1	......	....	......	....	......	2	98
3	6	2	4	8	......	....	3	8	99
5	43	18	25	38	2	4	5	72	100
....	4	3	1	....	......	1	......	3	101
....	**21**	**9**	**12**	**16**	**6**	**6**	**3**	**34**	102
....	7	3	4	5	1	1	1	10	103
....	14	6	8	11	5	5	2	24	104
....	......	......	......	....	......	....	......	....	105
3	**51**	**19**	**32**	**33**	**11**	**4**	**3**	**32**	106
....	12	5	7	6	9	4	......	6	107
....	3	3	......	....	......	....	......	3	108
....	**5**	**5**	......	**1**	**1**	**1**	......	**4**	109
....	5	2	3	4	......	....	1	3	110
3	31	9	22	23	2	....	2	20	111

part of the village located in Franklin county. Total for entire village is shown in blackface type.

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM				
		EPIDEMIC, INFECTIOUS AND OTHER GENERAL DISEASES —(*continued*)		Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM	
		Cancer 43–49	Diabetes 57		Organic heart disease 90	Arterio-sclerosis 91
112	FULTON COUNTY	**67**	**12**	**60**	**125**	**8**
113	Gloversville, city	38	5	31	67	3
114	Johnstown, city	15	3	16	21	3
115	Villages	4	....	....	5	1
116	Towns	10	4	13	32	1
117	GENESEE COUNTY	**49**	**14**	**62**	**52**	**20**
118	Batavia, city	20	5	26	16	7
119	LeRoy, village	3	3	5	4	3
120	Other villages	5	3	6	4	....
121	Towns	21	3	25	28	10
122	GREENE COUNTY	**39**	**8**	**68**	**58**	**13**
123	Catskill, village	8	....	4	11	4
124	Other villages	7	1	8	7	3
125	Towns	24	7	56	40	6
126	HAMILTON COUNTY	**6**	....	**5**	**5**	**1**
127	Towns	6	....	5	5	1
128	HERKIMER COUNTY	**75**	**18**	**86**	**115**	**14**
129	Little Falls, city	13	6	8	14	3
130	Dolgeville, village*	5	....	3	3	....
131	Frankfort, village	3	1	3	6	....
132	Herkimer, village	8	3	11	16	2
133	Ilion, village	10	2	16	15	1
134	Mohawk, village	5	2	9	4	1
135	Other villages	7	1	6	5	2
136	Towns	24	3	30	52	5
137	JEFFERSON COUNTY	**102**	**24**	**119**	**205**	**32**
138	Watertown, city	39	11	51	75	5
139	Carthage, village	5	1	4	10	1
140	Other villages	31	5	18	50	13
141	Towns	27	7	46	70	13
142	LEWIS COUNTY	**20**	**2**	**43**	**72**	**9**
143	Lowville, village	3	....	9	9	2
144	Other villages	3	2	9	14	1
145	Towns	14	....	25	49	6
146	LIVINGSTON COUNTY	**39**	**7**	**48**	**106**	**13**
147	Avon, village	1	....	3	5	....
148	Dansville, village	4	....	7	19	3
149	Mt. Morris, village	2	....	3	10	1
150	Other villages	11	4	7	12	3
151	Towns	19	3	27	50	5
152	—Craig Colony for Epileptics, Sonyea	2	....	1	10	1
153	MADISON COUNTY	**55**	**16**	**68**	**103**	**18**
154	Oneida, city	14	2	13	26	5
155	Canastota, village	6	2	2	7	2
156	Other villages	15	2	24	16	3
157	Towns	20	10	29	54	8
158	MONROE COUNTY	**413**	**90**	**378**	**687**	**104**
159	Rochester, city	342	82	285	542	52
160	—Rochester State Hospital	4	3	7	29	22
161	Brockport, village	4	....	8	12	....
162	East Rochester, village	3	....	3	7	1
163	Fairport, village	4	....	8	7	6
164	Other villages	12	....	12	16	....
165	Towns	44	5	55	74	23

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* Dolgeville, village, is located in two counties, Fulton and Herkimer. This total represents that face type.

stillbirths) from important causes, by counties: 1921 — (Continued)

(Continued)

DISEASES OF THE RESPIRATORY SYSTEM				DISEASES OF THE DIGESTIVE SYSTEM				Nephritis and Bright's disease 128, 129	Line number
Bronchitis 99	Pneumonia 100, 101			Diarrhea and enteritis under 2 years 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122		
	Total all forms 100, 101	Broncho 100	Lobar and unqualified 101						
3	**30**	**14**	**16**	**17**	**10**	**9**	**5**	**64**	112
2	15	6	9	9	9	5	3	35	113
....	10	5	5	3	......	2	2	16	114
....	1	1	......	1	......	1	......	2	115
1	4	2	2	4	1	1	......	11	116
14	**37**	**14**	**23**	**14**	**8**	**4**	**4**	**28**	117
5	11	6	5	8	8	2	2	15	118
3	5	2	3	....	......	1	......	3	119
....	2	1	1	....	......	....	......	6	120
6	19	5	14	6	......	1	2	4	121
....	**27**	**14**	**13**	**3**	**1**	**1**	**5**	**37**	122
....	3	......	3	2	......	....	2	6	123
....	5	4	1	....	1	1	......	8	124
....	19	10	9	1	......	....	3	23	125
1	**5**	**4**	**1**	**2**	**1**	....	......	**2**	126
1	5	4	1	2	1	....	......	2	127
10	**54**	**23**	**31**	**12**	**15**	**1**	**1**	**78**	128
2	7	2	5	4	4	1	......	7	129
2	......	......	......	....	......	....	......	8	130
....	......	......	......	2	......	....	......	2	131
2	11	6	5	1	2	....	......	9	132
2	10	2	8	1	7	....	......	18	133
....	2	2	......	1	......	....	......	6	134
....	6	5	1	....	......	....	......	....	135
2	18	6	12	3	2	....	1	33	136
4	**54**	**25**	**29**	**29**	**4**	**14**	**3**	**56**	137
1	16	6	10	16	4	12	2	20	138
....	2	1	1	1	......	....	......	4	139
2	12	5	7	4	......	1	......	12	140
1	24	13	11	8	......	1	1	20	141
....	**18**	**8**	**10**	**9**	**2**	**1**	......	**18**	142
....	2	2	......	1	......	....	......	4	143
....	3	1	2	2	......	....	......	6	144
....	13	5	8	6	2	1	......	8	145
2	**42**	**20**	**22**	**22**	**2**	**1**	**3**	**22**	146
....	3	......	3	4	......	....	......	3	147
....	3	3	......	....	1	....	1	3	148
....	2	......	2	3	......	....	1	....	149
....	4	2	2	2	1	....	1	5	150
2	9	3	6	13	......	....	......	11	151
....	21	12	9	....	......	1	......	....	152
6	**44**	**20**	**24**	**16**	**4**	**5**	**6**	**31**	153
2	5	3	2	4	3	1	2	6	154
....	4	2	2	5	1	....	1	2	155
1	13	7	6	1	......	....	1	8	156
3	22	8	14	6	......	4	2	15	157
33	**260**	**122**	**138**	**184**	**56**	**37**	**27**	**391**	158
24	217	96	121	165	51	30	24	342	159
....	7	5	2	....	1	4	......	6	160
....	1	1	......	....	2	1	......	2	161
2	6	3	3	1	......	....	......	3	162
....	6	3	3	....	1	....	......	1	163
1	3	2	1	3	......	....	1	7	164
6	20	12	8	15	1	2	2	30	165

Part of the village located in Herkimer county. The total for the entire village is shown in black-

Table 38 — STATE OF NEW YORK: ***Deaths (exclusive of***

Line number	AREA	DEATHS FROM				
		EPIDEMIC, INFECTIOUS AND OTHER GENERAL DISEASES — (*continued*)		Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM	
		Cancer 43–49	Diabetes 57		Organic heart disease 90	Arterio-sclerosis 91
166	MONTGOMERY COUNTY	56	13	81	135	20
167	Amsterdam, city	32	7	34	57	7
168	Fort Plain, village	4	....	6	12	....
169	Other villages	11	5	12	23	11
170	Towns	9	1	29	43	2
171	NASSAU COUNTY	122	26	129	232	29
172	Glen Cove, city	8	2	7	19	....
173	Cedarhurst, village	2	....	4	1	....
174	Freeport, villlage	11	1	9	22	....
175	Lawrence, village	2	1	1	2	1
176	Hempstead, village	4	1	6	12	2
177	Lynbrook, village	3	2	10	12	2
178	Rockville Center, village	5	1	9	14	3
179	Mineola, village	9	2	6	13	1
180	Other villages	15	1	15	30	2
181	Towns	63	15	62	107	18
182	NIAGARA COUNTY	116	22	93	195	32
183	Lockport, city	18	1	25	47	13
184	Niagara Falls, city	50	4	32	55	7
185	North Tonawanda, city	20	5	11	16	1
186	La Salle, village	1	1	....	5	....
187	Other villages	4	....	4	13	....
188	Towns	23	11	21	59	11
189	ONEIDA COUNTY	247	35	226	432	64
190	Rome, city	43	4	41	68	10
191	—Rome Custodial Asylum	1	....	3	4	....
192	Utica, city	135	19	86	165	25
193	—Utica State Hospital	2	....	11	48	5
194	Sherrill, city	1	....	2	2	....
195	Whitesboro, village	3	....	5	4	....
196	Other villages	20	8	25	47	6
197	Towns	42	4	53	94	18
198	ONONDAGA COUNTY	277	64	268	476	61
199	Syracuse, city	194	48	168	313	31
200	—State Institution for Feeble-Minded Children, Syracuse	....	....	....	1	....
201	Baldwinsville, village	8	....	8	11	2
202	East Syracuse, village	3	1	8	2	4
203	Solvay, village	5	....	2	9	....
204	Other villages	17	7	22	37	5
205	Towns	50	8	60	103	19
206	ONTARIO COUNTY	82	16	102	131	20
207	Canandaigua, city	18	1	18	25	3
208	Geneva, city	18	8	15	14	3
209	Villages	19	5	23	31	8
210	Towns	27	2	46	61	6
211	ORANGE COUNTY	141	29	211	260	52
212	Middletown, city	20	5	33	51	5
213	—Middletown State Hospital	4	....	11	22	10
214	Newburgh, city	41	7	56	67	8
215	Port Jervis, city	16	5	14	23	1
216	Goshen, village	4	....	4	5	3
217	Highland Falls, village	2	....	3	1	....
218	Walden, village	1	2	11	4	1
219	Other villages	9	2	21	18	6
220	Towns	44	8	58	69	18
221	ORLEANS COUNTY	29	10	39	69	13
222	Albion, village	6	1	9	17	1
223	Medina, village	5	4	8	10	6
224	Other villages	....	....	2	5	1
225	Towns	18	5	20	37	5

stillbirths) from important causes, by counties: **1921 — (Continued)**

(*Continued*)

DISEASES OF THE RESPIRATORY SYSTEM				DISEASES OF THE DIGESTIVE SYSTEM					
	Pneumonia 100, 101								
Bronchitis 99	Total all forms 100, 101	Broncho 100	Lobar and unqualified 101	Diarrhea and enteritis under 2 years 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122	Nephritis and Bright's disease 128, 129	Line number
6	43	18	25	19	9	8	5	61	166
2	26	10	16	14	5	8	4	32	167
....	1	1	......	....	......	....	......	9	168
....	9	4	5	....	2	....	......	8	169
4	7	3	4	5	2	....	1	12	170
15	96	36	60	44	13	11	9	146	171
....	7	1	6	3	......	....	......	12	172
....	1	1	......	....	......	....	......	3	173
3	2	2	......	3	......	....	1	12	174
....	......	......	......	....	......	....	......	2	175
....	2	1	1	2	......	....	......	5	176
....	4	1	3	1	1	....	......	8	177
1	6	1	5	....	......	1	......	4	178
1	18	5	13	4	6	6	......	10	179
....	6	3	3	8	......	....	1	11	180
10	50	21	29	28	6	4	7	79	181
14	95	45	50	82	12	6	8	71	182
2	14	6	8	12	7	1	2	17	183
5	55	29	26	59	3	3	2	31	184
2	7	3	4	4	2	2	......	7	185
....	4	1	3	....	......	....	1	....	186
1	2	1	1	1	......	....	......	4	187
4	13	5	8	6	......	....	8	12	188
34	177	87	90	94	33	18	14	226	189
9	19	6	13	18	5	4	4	32	190
4	3	1	2	4	......	....	......	3	191
9	96	50	46	54	24	11	6	111	192
....	4	1	3	....	1	....	......	12	193
....	1	1	......	1	......	....	......	....	194
....	3	1	2	....	......	....	......	5	195
2	11	4	7	2	1	....	2	20	196
10	40	23	17	15	2	3	2	43	197
17	215	97	118	119	27	26	14	210	198
9	157	62	95	96	25	22	9	137	199
....	......	......	......	....	......	....	......	....	200
2	1	1	......	2	......	....	......	4	201
1	1	1	......	....	......	....	1	4	202
1	7	4	3	3	......	1	......	3	203
1	9	4	5	3	......	....	......	21	204
3	40	25	15	15	2	3	4	41	205
9	60	29	31	18	4	9	3	88	206
2	12	5	7	5	3	3	1	16	207
3	16	9	7	2	1	3	......	20	208
....	15	8	7	3	......	2	......	26	209
4	17	7	10	3	......	1	2	26	210
19	104	46	58	37	22	15	23	155	211
....	20	11	9	7	10	1	......	30	212
....	7	2	5	....	......	1	1	18	213
5	27	12	15	7	4	4	8	44	214
3	5	3	2	10	7	4	11	6	215
....	1	1	......	2	......	....	1	....	216
....	2	2	......	....	......	2	......	5	217
1	4	3	1	1	......	....	2	3	218
1	7	2	5	3	......	1	......	8	219
9	31	10	21	7	1	2	5	41	220
1	29	14	15	14	4	1	4	36	221
1	8	6	2	4	1	1	......	8	222
....	5	4	1	4	1	....	4	8	223
....	1	......	1	3	......	....	......	1	224
....	15	4	11	3	2	....	......	19	225

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM—				
		EPIDEMIC, INFECTIOUS AND other GENERAL DISEASES — (*continued*)		Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM	
		Cancer 43–49	Diabetes 57		Organic heart disease 90	Arteriosclerosis 91
226	OSWEGO COUNTY	78	12	133	186	25
227	Fulton, city	7	3	22	24	4
228	Oswego, city	25	4	41	61	1
229	Villages	16	1	19	23	8
230	Towns	30	4	51	78	12
231	OTSEGO COUNTY	60	10	89	144	21
232	Oneonta, city	9	3	16	33	5
233	Cooperstown, village	1	....	10	7	....
234	Other villages	12	....	17	22	5
235	Towns	38	7	46	82	11
236	PUTNAM COUNTY	10	4	15	31	6
237	Villages	4	1	3	10	1
238	Towns	6	3	12	21	5
239	RENSSELAER COUNTY	178	28	174	277	47
240	Rensselaer, city	15	3	16	17	5
241	Troy, city	117	19	100	196	34
242	Hoosick Fall, village	7	1	10	10	....
243	Other villagess	4	....	3	6	....
244	Towns	35	5	45	48	8
245	ROCKLAND COUNTY	51	12	74	70	18
246	Haverstraw, village	2	....	7	8	1
247	Nyack, village	10	1	14	11	2
248	Spring Valley, village	3	1	2	2	....
249	Suffern, village	2	1	7	6	2
250	Other villages	11	1	3	7	2
251	Towns	23	8	41	33	11
252	—Letchworth Village, Thiells	....	....	....	3	....
253	—Hospital for Crippled and Deformed Children, West Haverstraw	....	....	....	....	....
254	ST. LAWRENCE COUNTY	103	21	139	217	67
255	Ogdensburg, city	26	8	20	27	11
256	—St. Lawrence State Hospital	5	....	9	53	14
257	Canton, village	6	....	7	5	4
258	Gouverneur, village	1	2	8	9	1
259	Massena, village	6	3	8	5	....
260	Potsdam, village	7	2	7	7	6
261	Other villages	5	2	9	17	2
262	Towns	47	4	71	94	29
263	SARATOGA COUNTY	63	9	78	137	21
264	Saratoga Springs, city	22	6	18	40	2
265	Mechanicville, city	5	2	8	13	4
266	Ballston Spa, village	8	....	7	11	3
267	Waterford, village	5	....	4	6	1
268	Other villages	6	1	9	10	5
269	Towns	17	....	32	57	6
270	SCHENECTADY, COUNTY	83	17	129	153	40
271	Schenectady, city	75	15	101	130	33
272	Scotia, village	2	1	4	3	1
273	Towns	6	1	24	20	6
274	SCHOHARIE COUNTY	34	9	47	58	5
275	Villages	10	2	11	16	1
276	Towns	24	7	36	42	4
277	SCHUYLER COUNTY	19	6	33	51	12
278	Watkins, village	4	4	7	12	3
279	Other villages	4	....	4	5	2
280	Towns	11	2	22	34	7

stillbirths) from important causes, by counties: 1921 — (Continued)

(Continued)

DISEASES OF THE RESPIRATORY SYSTEM				DISEASES OF THE DIGESTIVE SYSTEM				Nephritis and Bright's disease 128, 129	Line number
Bronchitis 99	Pneumonia 100, 101			Diarrhea and enteritis under 2 years 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122		
	Total all forms 100, 101	Broncho 100	Lobar and unqualified 101						
10	**74**	**33**	**41**	**25**	**9**	**6**	**6**	**95**	226
3	15	4	11	4	5	......	1	14	227
1	19	6	13	9	3	3	2	29	228
......	10	6	4	2	......	......	2	9	229
6	30	17	13	10	1	3	1	43	230
4	**61**	**23**	**38**	**6**	**12**	**7**	**7**	**80**	231
......	15	5	10	2	8	3	......	24	232
......	1	1	......	......	2	1	2	2	233
......	7	3	4	......	1	......	1	19	234
4	38	14	24	4	1	3	4	35	235
4	**4**	......	**4**	**3**	......	**1**	......	**14**	236
1	2	......	2	1	......	......	......	4	237
3	2	......	2	2	......	1	......	10	238
7	**130**	**68**	**62**	**45**	**17**	**23**	**7**	**163**	239
1	8	6	2	2	......	......	......	11	240
3	87	46	41	38	15	18	6	100	241
......	5	4	1	2	......	......	......	12	242
......	......	......	......	1	......	......	......	5	243
3	30	12	18	2	2	5	1	35	244
5	**36**	**17**	**19**	**15**	**5**	**2**	**2**	**68**	245
......	7	3	4	1	1	......	1	8	246
1	7	2	5	......	4	......	1	6	247
......	1	......	1	1	......	......	......	4	248
......	3	......	3	1	......	2	......	7	249
......	6	4	2	1	......	......	......	14	250
3	9	5	4	11	......	......	......	29	251
1	3	3	......	......	......	......	......	......	252
......	......	......	......	......	......	......	......	......	253
15	**69**	**29**	**40**	**50**	**14**	**14**	**10**	**94**	254
5	9	2	7	9	12	6	2	24	255
......	13	7	6	......	......	......	......	11	256
1	2	......	2	1	......	1	......	3	257
......	2	1	1	2	......	......	2	2	258
1	2	......	2	1	......	1	......	4	259
3	2	1	1	4	......	......	2	5	260
......	6	5	1	2	......	1	2	4	261
5	33	13	20	31	2	5	2	41	262
4	**55**	**31**	**24**	**18**	**8**	**13**	**10**	**90**	263
......	12	6	6	7	6	7	4	44	264
2	7	4	3	1	......	1	1	6	265
......	4	2	2	......	1	......	......	7	266
......	......	......	......	......	......	1	......	3	267
1	7	5	2	1	......	2	2	12	268
1	25	14	11	9	1	2	3	18	269
9	**63**	**30**	**33**	**12**	**12**	**14**	**3**	**87**	270
8	59	27	32	9	12	12	2	70	271
......	......	......	......	1	......	1	......	2	272
1	4	3	1	2	......	1	1	15	273
5	**15**	**8**	**7**	**2**	......	**1**	**6**	**30**	274
2	2	2	......	......	......	......	1	14	275
3	13	6	7	2	......	1	5	16	276
2	**4**	**1**	**3**	**1**	**1**	**6**	**4**	**38**	277
......	2	......	2	......	......	2	......	11	278
1	......	......	......	......	1	2	......	4	279
1	2	1	1	1	......	2	4	23	280

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM—				
		EPIDEMIC, INFECTIOUS AND OTHER GENERAL DISEASES — (*continued*)		Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM	
		Cancer 43–49	Diabetes 57		Organic heart disease 90	Arterio-sclerosis 91
281	SENECA COUNTY	**38**	**6**	**43**	**129**	**20**
282	Seneca Falls, village	11	....	8	18	4
283	Waterloo, village	6	2	4	13	....
284	Other villages	3	....	6	1	....
285	Towns	13	4	18	27	8
286	—Willard State Hospital	5	....	7	70	8
287	STEUBEN COUNTY	**101**	**19**	**129**	**245**	**53**
288	Corning, city	12	6	19	21	7
289	Hornell, city	19	2	15	47	6
290	Bath, village	5	1	6	14	2
291	Other villages	22	3	27	27	14
292	Towns	39	7	51	65	18
293	—Soldiers' and Sailors' Home, Bath	4	....	11	71	6
294	SUFFOLK COUNTY	**147**	**27**	**170**	**294**	**141**
295	Amityville, village	4	1	18	14	10
296	Babylon, village	6	....	4	3	3
297	Greenport, village	7	....	5	9	3
298	Patchogue, village	4	1	2	7	....
299	Sag Harbor, village	6	1	5	6	4
300	Southampton, village	5	2	8	7	2
301	Other villages	3	1	9	11	3
302	Towns	86	19	102	153	35
303	—Central Islip State Hospital	1	2	15	49	61
304	—Kings Park State Hospital	16	....	2	35	20
305	SULLIVAN COUNTY	**32**	**9**	**45**	**70**	**1**
306	Villages	7	2	5	15	1
307	Towns	25	7	40	55	....
308	TIOGA COUNTY	**29**	**6**	**67**	**76**	**13**
309	Owego, village	9	1	11	12	5
310	Waverly, village	4	2	8	14	2
311	Other villages	5	1	13	16	....
312	Towns	11	2	35	34	6
313	TOMPKINS COUNTY	**42**	**9**	**70**	**75**	**22**
314	Ithaca, city	27	5	19	27	12
315	Villages	5	1	15	10	2
316	Towns	10	3	36	38	8
317	ULSTER COUNTY	**81**	**20**	**118**	**166**	**29**
318	Kingston, city	35	11	28	60	15
319	Ellenville, village	6	1	7	9	2
320	Saugerties, village	7	1	5	6	3
321	Other villages	3	....	7	10	....
322	Towns	30	7	71	81	9
323	—Eastern New York Reformatory, Napanoch	....	....	....	....	....
324	WARREN COUNTY	**49**	**9**	**42**	**87**	**25**
325	Glens Falls, city	26	6	24	44	16
326	Villages	1	....	....	1	1
327	Towns	22	3	18	42	8
328	WASHINGTON COUNTY	**51**	**11**	**76**	**105**	**19**
329	Fort Edward, village	3	1	5	11	....
330	Granville, village	6	1	4	4	1
331	Hudson Falls, village	10	2	16	13	1
332	Whitehall, village	3	....	9	5	3
333	Other villages	10	2	8	16	4
334	Towns	19	5	34	56	10
335	—Great Meadow Prison, Comstock	....	....	....	....	....

stillbirths) from important causes, by counties: 1921 — (Continued)

(*Continued*)

DISEASES OF THE RESPIRATORY SYSTEM				DISEASES OF THE DIGESTIVE SYSTEM				Nephritis and Bright's disease 128, 129	Line number
Bronchitis 99	Pneumonia 100, 101			Diarrhea and enteritis under 2 years 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122		
	Total all forms 100, 101	Broncho 100	Lobar and unqualified 101						
1	24	14	10	9	1	7	3	54	281
....	4	2	2	3	1	1	1	6	282
....	......	......	......	1	......	2	1	5	283
1	......	......	......	....	......	....	......	2	284
....	4	1	3	5	......	2	1	13	285
....	16	11	5	....	......	2	......	28	286
13	75	32	43	19	14	14	11	113	287
1	13	6	7	6	3	3	4	14	288
3	13	10	3	1	5	1	4	17	289
....	5	2	3	....	1	1	......	8	290
....	11	4	7	2	1	2	......	17	291
8	25	9	16	10	4	4	3	51	292
1	8	1	7	....	......	3	......	6	293
15	135	64	71	16	10	11	10	198	294
5	3	1	2	....	......	....	......	17	295
....	3	2	1	2	5	....	......	4	296
....	3	......	3	....	3	1	......	2	297
....	5	5	......	....	......	....	1	5	298
....	2	2	......	....	......	....	......	2	299
....	1	......	1	....	......	1	......	7	300
....	6	2	4	....	......	....	1	7	301
8	56	20	36	14	1	4	7	107	302
1	26	14	12	....	......	2	1	23	303
1	30	18	12	....	1	3	......	24	304
7	24	14	10	8	......	1	8	34	305
3	......	......	......	1	......	....	......	7	306
4	24	14	10	7	......	1	8	27	307
8	34	12	22	4	1	3	......	25	308
1	2	1	1	1	......	1	......	6	309
....	9	2	7	2	......	1	......	3	310
2	9	4	5	....	......	....	......	4	311
5	14	5	9	1	1	1	......	12	312
2	36	15	21	10	2	7	3	55	313
1	24	5	19	5	1	5	2	36	314
....	3	2	1	....	......	....	......	3	315
1	9	8	1	5	1	2	1	16	316
13	78	25	53	16	14	18	7	108	317
7	31	13	18	4	12	14	4	41	318
....	4	2	2	1	......	....	......	1	319
1	5	1	4	2	......	....	......	9	320
1	2	1	1	....	......	1	......	8	321
4	36	8	28	9	2	3	3	49	322
....	......	......	......	....	......	....	......	....	323
4	16	7	9	9	9	5	1	38	324
2	11	6	5	4	9	4	1	14	325
....	......	......	......	....	......	....	......	1	326
2	5	1	4	5	......	1	......	23	327
4	45	19	26	11	1	5	......	68	328
....	4	2	2	1	......	....	......	5	329
....	2	......	2	1	......	....	......	5	330
....	8	4	4	4	......	....	......	6	331
....	8	4	4	1	......	1	......	12	332
2	5	1	4	1	......	2	......	11	333
2	17	7	10	3	1	2	......	29	334
....	1	1	......	....	......	....	......	....	335

Table 38 — STATE OF NEW YORK: ***Deaths (exclusive of***

Line number	AREA	DEATHS FROM				
		EPIDEMIC, INFECTIOUS AND OTHER GENERAL DISEASES — (*concluded*)		Apoplexy and cerebral hemorrhage 74	DISEASES OF THE CIRCULATORY SYSTEM	
		Cancer 43–49	Diabetes 57		Organic heart disease 90	Arterio-sclerosis 91
336	WAYNE COUNTY	**59**	**10**	**98**	**82**	**20**
337	Clyde, village	....	1	8	2	....
338	Lyons, village	7	....	11	4	1
339	Newark, village	10	....	13	12	4
340	Other villages	14	3	16	10	5
341	Towns	26	6	50	54	10
342	—Newark State Custodial Asylum	2	....	....	....	....
343	WESTCHESTER COUNTY	**395**	**58**	**327**	**518**	**76**
344	Mt. Vernon, city	43	3	29	68	1
345	New Rochelle, city	23	4	25	55	5
346	Ossining, village	11	4	14	24	4
347	—Sing Sing Prison	....	....	....	1	....
348	Peekskill, village	17	11	25	19	2
349	White Plains, city	24	4	21	50	5
350	Port Chester, village	14	4	16	23	5
351	Yonkers, city	80	16	72	108	20
352	Bronxville, village	1	4	2	4	1
353	Dobbs Ferry, village	4	1	8	6	2
354	Hastings-on-Hudson, village	3	....	5	4	1
355	Irvington, village	2	....	3	1	1
356	Mamaroneck, village	5	....	2	8	1
357	Mt. Kisco, village	5	....	8	5	3
358	North Tarrytown, village	4	....	5	3	2
359	Pleasantville, village	4	....	4	10	1
360	Rye, village	4	....	6	12	3
361	Tarrytown, village	10	....	10	7	1
362	Scarsdale, village	2	....	....	4	....
363	Tuckahoe, village	1	1	3	5	....
364	Other villages	12	....	15	14	3
365	Towns	126	6	54	87	15
366	—State Reformatory for Women, Bedford	....	....	....	....	....
367	WYOMING COUNTY	**48**	**6**	**72**	**68**	**12**
368	Perry, village	5	1	13	10	1
369	Warsaw, village	10	1	11	9	2
370	Other villages	15	2	19	17	1
371	Towns	18	2	29	32	8
372	YATES COUNTY	**16**	**5**	**36**	**61**	**7**
373	Penn Yan, village	9	1	10	20	2
374	Other villages	....	1	5	9	....
375	Towns	7	3	21	32	5

stillbirths) from important causes, by counties: 1921 — (Continued)

(*Continued*)

DISEASES OF THE RESPIRATORY SYSTEM				DISEASES OF THE DIGESTIVE SYSTEM				Nephritis and Bright's disease 128, 129	Line number
Bronchitis 99	Pneumonia 100, 101			Diarrhea and enteritis under 2 years 113	Appendicitis 117	Hernia, intestinal obstruction 118	Cirrhosis of liver 122		
	Total all forms 100, 101	Broncho 100	Lobar and unqualified 101						
3	43	14	29	5	2	4	5	47	336
....	1	......	1	1	......	....	1	5	337
....	7	3	4	....	1	....	......	9	338
3	3	......	3	1	......	....	......	9	339
....	7	2	5	....	......	3	1	4	340
....	24	8	16	3	1	1	3	20	341
....	1	1	......	....	......	....	......	....	342
31	313	120	193	96	29	35	21	313	343
....	45	26	19	11	1	1	4	50	344
4	31	12	19	7	4	3	4	19	345
1	4	1	3	1	1	3	......	14	346
....	2	......	2	....	......	....	......	1	347
5	10	2	8	2	2	2	1	12	348
....	21	5	16	2	3	4	......	18	349
1	8	3	5	3	2	4	......	23	350
8	88	30	58	33	11	9	5	83	351
....	......	......	......	....	2	1	1	2	352
1	6	1	5	2	......	....	......	3	353
1	5	3	2	6	......	....	......	2	354
....	......	......	......	....	......	1	......	3	355
....	9	4	5	....	......	1	2	7	356
....	6	3	3	1	2	....	......	3	357
....	6	3	3	....	......	....	......	4	358
1	2	......	2	....	......	....	......	1	359
....	3	1	2	2	......	....	......	2	360
....	9	1	8	2	......	1	......	5	361
....	......	......	......	....	......	....	......	....	362
....	3	......	3	....	......	....	1	....	363
2	10	5	5	....	......	....	......	13	364
7	45	20	25	24	1	5	3	48	365
....	......	......	......	....	......	....	......	....	366
6	17	8	9	12	2	1	1	29	367
1	2	1	1	2	......	....	1	2	368
....	4	......	4	2	2	....	......	4	369
1	2	2	......	1	......	....	......	7	370
4	9	5	4	7	......	1	......	16	371
3	12	7	5	7	......	2	2	21	372
....	1	......	1	5	......	....	......	9	373
....	6	6	......	....	......	....	1	5	374
3	5	1	4	2	......	2	1	7	375

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM— THE PUERPERAL STATE: Puerperal septicoemia 146	THE PUERPERAL STATE: Other puerperal affections 143–45, 147–50	MALFORMATIONS AND DISEASES OF EARLY INFANCY: Congenital malformation 159	MALFORMATIONS AND DISEASES OF EARLY INFANCY: Premature birth 161-A	MALFORMATIONS AND DISEASES OF EARLY INFANCY: Congenital debility 160	MALFORMATIONS AND DISEASES OF EARLY INFANCY: Other causes peculiar to early infancy 161-B, 162–63
1	**STATE OF NEW YORK**	412	984	1,504	4,233	1,222	2,144
2	**New York City**	171	575	672	2,047	729	1,263
3	**Rest of State**	241	409	832	2,186	493	881
4	**Cities**	158	260	455	1,294	230	551
5	**Villages**	35	62	120	313	89	124
6	**Towns**	47	83	243	556	173	194
7	**Institutional Districts**	1	4	14	23	1	12
8	ALBANY COUNTY	8	19	29	69	18	37
9	Albany, city	6	17	17	45	7	28
10	Cohoes, city	......	1	7	6	2	6
11	Watervliet, city	......	1	3	5	4	....
12	Green Island, village	......	......	......	2	......	....
13	Other villages	......	......	......	2	1	....
14	Towns	2	......	2	9	4	3
15	ALLEGANY COUNTY	1	1	1	7	8	2
16	Wellsville, village	......	......	......	1	......	1
17	Other villages	1	......	......	1	3	1
18	Towns	......	1	1	5	5	....
19	BROOME COUNTY	4	13	23	65	19	19
20	Binghamton, city	2	5	14	32	7	4
21	—Binghamton State Hospital	1	......	......	......	......	....
22	Endicott, village	......	4	4	10	5	5
23	Johnson City, village	1	4	3	13	5	6
24	Union, village	......	......	......	......	......	....
25	Other villages	......	......	......	......	......	....
26	Towns	......	......	2	10	2	4
27	CATTARAUGUS COUNTY	7	11	7	45	10	10
28	Olean, city	5	7	2	15	3	3
29	Salamanca, city	......	1	1	6	1	4
30	Gowanda, village*	......	......	1	3	1	....
31	Other villages	......	1	......	6	......	....
32	Towns	2	2	3	15	5	3
33	CAYUGA COUNTY	3	3	9	22	9	15
34	Auburn, city	2	2	7	16	6	7
35	—Auburn State Prison	......	......	......	......	......	....
36	Villages	......	......	......	......	......	2
37	Towns	1	1	2	6	3	6
38	CHAUTAUQUA COUNTY	5	9	13	57	14	20
39	Dunkirk, city	1	4	3	12	2	5
40	Jamestown, city	4	2	5	28	3	11
41	Falconer, village	......	......	......	......	1	....
42	Fredonia, village	......	1	......	4	1	....
43	Silver Creek, village	......	......	......	1	......	....
44	Westfield, village	......	1	......	3	......	....
45	Other villages	......	......	1	2	2	....
46	Towns	......	1	4	12	5	4
47	CHEMUNG COUNTY	3	7	7	30	4	13
48	Elmira, city	2	3	3	22	1	13
49	—Elmira State Reformatory	......	......	......	......	......	....
50	Elmira Heights, village	......	......	2	1	......	....
51	Other villages	......	1	......	2	......	....
52	Towns	1	3	2	5	3	....
53	CHENANGO COUNTY	2	2	5	10	4	6
54	Norwich, city	2	2	......	2	1	2
55	Villages	......	......	1	4	......	1
56	Towns	......	......	4	4	3	3
57	—Woman's Relief Corps Home, Oxford	......	......	......	......	......	....

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* Gowanda, village, is located in two counties, Cattaraugus and Erie. No deaths were reported

stillbirths) from important causes, by counties: 1921 — (Continued)

(*Concluded*)

Old age 164	EXTERNAL CAUSES							All other causes	Line number
	Accidents					Suicides 164–74	Homicides 197–200		
	Total accidents 175–96, 201–3	Drowning 182	Railroad 188-A	Automobile 188-C	Other accidents 175–196, 201–3				
708	7,187	869	392	1,629	4,297	1,442	501	17,939	1
223	3,483	366	80	849	2,188	831	303	8,241	2
485	3,704	503	312	780	2,109	611	198	9,698	3
145	1,860	157	134	437	1,132	272	127	4,714	4
95	569	71	46	102	350	102	14	1,621	5
244	1,230	275	130	240	585	213	56	2,545	6
1	45	......	2	1	42	24	1	818	7
5	149	21	10	39	79	31	10	367	8
5	93	6	6	33	48	24	8	260	9
......	13	4	......	2	7	......	......	37	10
......	8	3	......	......	5	......	1	21	11
......	5	1	......	1	3	......	......	10	12
......	......	......	......	......	......	......	......	1	13
......	30	7	4	3	16	7	1	38	14
5	33	4	5	5	19	5	......	86	15
......	7	......	1	1	5	1	......	12	16
2	9	1	......	......	8	3	......	30	17
3	17	3	4	4	6	1	......	44	18
10	81	3	9	18	51	15	2	271	19
3	46	2	5	11	28	6	2	132	20
......	1	......	......	......	1	1	......	58	21
2	8	1	1	2	4	2	......	8	22
2	10	......	......	......	10	1	......	23	23
......	......	......	......	......	......	......	......	1	24
......	1	......	1	......	......	2	......	7	25
3	15	......	2	5	8	3	......	42	26
9	57	5	9	9	34	7	3	166	27
2	20	......	1	3	16	2	......	53	28
1	5	......	2	2	1	1	......	16	29
......	3	1	......	......	2	......	......	3	30
2	13	......	4	1	8	2	......	27	31
4	16	4	2	3	7	2	3	67	32
13	49	4	3	9	33	8	......	119	33
9	23	......	1	5	17	2	......	70	34
......	1	......	......	......	1	......	......	1	35
1	6	2	......	......	4	3	......	15	36
3	19	2	2	4	11	3	......	33	37
28	83	12	10	14	47	18	7	262	38
1	14	1	3	2	8	1	2	39	39
2	28	3	1	7	17	6	1	94	40
......	1	......	......	......	1	1	......	1	41
3	2	......	......	......	2	2	......	15	42
2	2	......	......	2	......	1	......	3	43
......	2	......	1	......	1	......	......	6	44
3	9	2	1	1	5	1	1	23	45
17	25	6	4	2	13	6	3	81	46
9	54	5	6	9	34	5	3	118	47
1	38	1	4	7	26	4	3	92	48
......	......	......	......	......	......	......	......	......	49
......	2	......	......	......	2	......	......	2	50
1	4	......	......	1	3	......	......	3	51
7	10	4	2	1	3	1	......	21	52
4	18	......	3	3	12	9	1	87	53
1	8	......	2	......	6	......	......	29	54
1	4	......	1	......	3	3	......	23	55
2	6	......	......	3	3	6	1	33	56
......	......	......	......	......	......	......	......	2	57

for that part located in Erie county.

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM—					
		THE PUERPERAL STATE		MALFORMATIONS AND DISEASES OF EARLY INFANCY			
		Puerperal septicemia 146	Other puerperal affections 143–45, 147–50	Congenital malformation 159	Premature birth 161-A	Congenital debility 160	Other causes peculiar to early infancy 161-B, 162–63
58	**CLINTON COUNTY**	**4**	**7**	**5**	**38**	**15**	**14**
59	Plattsburg, city	3	3	......	13	5	4
60	Villages	......	......	1	2	1	......
61	Towns	1	4	4	23	9	10
62	—Clinton Prison	......	......	......	......	......	......
63	—Dannemora State Hospital	......	......	......	......	......	......
64	**COLUMBIA COUNTY**	**2**	......	**6**	**12**	**2**	**6**
65	Hudson, city	2	......	2	10	1	2
66	—State Training School for Girls, Hudson	......	......	......	......	......	......
67	Chatham, village	......	......	......	......	......	......
68	Villages	......	......	2	......	......	......
69	Towns	......	......	2	2	1	4
70	**CORTLAND COUNTY**	**1**	**2**	**5**	**11**	**1**	**5**
71	Cortland, city	......	1	5	5	......	3
72	Homer, village	......	......	......	1	......	......
73	Other villages	......	......	......	......	1	1
74	Towns	1	1	......	5	......	1
75	**DELAWARE COUNTY**	**3**	**2**	**5**	**20**	**8**	**4**
76	Sidney, village	......	1	1	3	......	......
77	Walton, village	......	......	......	2	......	......
78	Other villages	......	......	2	4	2	......
79	Towns	3	1	2	11	6	4
80	**DUTCHESS COUNTY**	**2**	**5**	**9**	**26**	**12**	**15**
81	Beacon, city	......	1	1	3	3	1
82	—Matteawan State Hospital	......	......	......	......	......	......
83	Poughkeepsie, city	2	2	1	10	2	6
84	Wappinger Falls, village	......	1	......	2	1	1
85	Other villages	......	......	1	......	2	......
86	Towns	......	1	6	11	4	7
87	—Hudson River State Hospital	......	......	......	......	......	......
88	**ERIE COUNTY**	**28**	**61**	**151**	**376**	**40**	**190**
89	Buffalo, city	27	49	113	296	34	149
90	—Buffalo State Hospital	......	......	......	2	......	......
91	Lackawanna, city	......	2	3	18	2	7
92	—Our Lady of Victory Infant Home, Lackawanna	......	4	14	16	1	6
93	Tonawanda, city	......	......	2	4	1	......
94	Depew, village	......	......	1	4	1	4
95	East Aurora, village	......	......	1	......	......	1
96	Hamburg, village	......	......	1	......	......	......
97	Lancaster, village	......	......	1	3	......	5
98	Kenmore, village	......	......	2	......	......	1
99	Other villages	......	......	3	8	......	3
100	Towns	1	6	10	25	1	14
101	—Gowanda State Hospital	......	......	......	......	......	......
102	**ESSEX COUNTY**	**1**	**5**	**10**	**23**	**4**	**3**
103	Villages	1	1	3	7	1	2
104	Towns	......	4	7	16	3	1
105	—Raybrook State Hospital for Incipient Tuberculosis	......	......	......	......	......	......
106	**FRANKLIN COUNTY**	**5**	**5**	**13**	**25**	**6**	**12**
107	Malone, village	2	2	4	9	3	2
108	Saranac Lake, village*	1	......	......	......	......	1
109	*Saranac Lake*	2	......	1	1	......	1
110	Other villages	......	......	1	......	......	1
111	Towns	2	3	8	16	3	8

* Saranac Lake, village, is located in two counties, Essex and Franklin. This total represents blackface type.

stillbirths) from important causes, by counties: 1921 — (Continued)

(*Concluded*)

Old age 164	EXTERNAL CAUSES							All other causes	Line number
	Accidents					Suicides 164–74	Homicides 197–200		
	Total accidents 175–96, 201–3	Drowning 182	Railroad 188-A	Automobile 188-C	Other accidents 175–196, 201–3				
6	43	5	2	9	27	5	5	84	58
2	19	3	1	4	11	1	3	28	59
1	3	......	......	......	3	....	....	13	60
3	20	2	1	5	12	3	1	40	61
....	......	......	......	......	......	....	1	1	62
....	1	......	......	......	1	1	....	2	63
1	40	6	2	8	24	5	1	87	64
....	16	2	1	1	12	2	1	31	65
....	......	......	......	......	......	1	....	....	66
....	2	1	......	......	1	....	....	5	67
....	3	......	......	......	3	....	....	5	68
1	19	3	1	7	8	2	....	46	69
10	15	3	......	2	10	4	....	66	70
1	5	......	......	1	4	3	....	36	71
6	4	......	......	......	4	....	....	4	72
....	1	......	....	1	......	....	....	9	73
3	5	3	......	......	2	1	....	17	74
9	27	1	5	4	17	4	....	106	75
....	1	......	1	......	......	....	....	6	76
1	3	......	......	......	3	1	....	16	77
3	1	......	......	......	1	....	....	19	78
5	22	1	4	4	13	3	....	65	79
5	61	9	4	10	38	10	3	238	80
....	6	......	......	2	4	....	1	15	81
....	......	......	......	......	......	3	....	9	82
2	19	3	......	2	14	1	1	54	83
....	2	......	......	......	2	....	....	6	84
....	7	......	......	1	6	1	....	15	85
3	27	6	4	5	12	4	1	62	86
....	......	......	......	......	......	1	....	77	87
16	404	50	47	109	198	73	45	1,178	88
8	308	33	34	80	161	54	38	885	89
....	3	......	......	......	3	1	....	53	90
....	15	......	1	6	8	3	1	15	91
[1]	2	......	......	1	1	....	....	64	92
....	6	3	......	2	1	....	....	10	93
....	1	......	......	......	1	1	1	6	94
....	4	......	1	2	1	....	....	5	95
....	1	......	......	......	1	....	....	1	96
....	1	......	......	......	1	....	....	3	97
....	1	......	......	......	1	....	....	1	98
2	7	......	......	1	6	....	....	18	99
6	55	14	11	17	13	14	5	92	100
....	......	......	......	......	......	....	....	25	101
5	34	8	1	5	20	6	....	67	102
1	8	6	......	......	2	2	....	22	103
4	26	2	1	5	18	4	....	45	104
....	......	......	......	......	......	....	....	....	105
12	31	5	......	6	20	3	3	96	106
1	9	......	......	2	7	2	....	27	107
....	......	......	......	......	......	....	2	4	108
....	1	......	......	......	1	....	2	8	109
....	2	......	......	1	1	....	1	6	110
11	20	5	......	3	12	1	....	59	111

that part of the village located in Franklin county. The total for entire village is shown in

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM—					
		THE PUERPERAL STATE		MALFORMATIONS AND DISEASES OF EARLY INFANCY			
		Puerperal septicemia 146	Other puerperal affections 143–45, 147–50	Congenital malformation 159	Premature birth 161-A	Congenital debility 160	Other causes peculiar to early infancy 161-B, 162–63
112	**FULTON COUNTY**	**2**	**3**	**6**	**16**	**1**	**5**
113	Gloversville, city	1	3	2	9	1	1
114	Johnstown, city	1	......	2	1	......	1
115	Villages	......	......	......	......	......	1
116	Towns	......	......	2	6	......	2
117	**GENESEE COUNTY**	**1**	**6**	**6**	**33**	**5**	**8**
118	Batavia, city	......	4	2	19	3	5
119	LeRoy, village	......	......	......	2	......	......
120	Other villages	......	1	1	5	1	1
121	Towns	1	1	3	7	1	2
122	**GREENE COUNTY**	......	**1**	**7**	**10**	**5**	**4**
123	Catskill, village	......	......	1	1	......	1
124	Other villages	......	......	1	1	......	1
125	Towns	......	1	5	8	5	2
126	**HAMILTON COUNTY**	......	......	**1**	**1**	......	......
127	Towns	......	......	1	1	......	......
128	**HERKIMER COUNTY**	**5**	**11**	**12**	**30**	**7**	**13**
129	Little Falls, city	1	6	3	6	2	4
130	Dolgeville, village*	1	......	......	......	......	......
131	Frankfort, village	......	......	......	5	......	3
132	Herkimer, village	1	2	1	8	2	2
133	Ilion, village	......	1	......	2	......	3
134	Mohawk, village	1	......	......	2	......	......
135	Other villages	......	......	2	2	......	1
136	Towns	1	2	6	5	3	......
137	**JEFFERSON COUNTY**	**4**	**11**	**19**	**40**	**17**	**9**
138	Watertown, city	3	7	13	22	9	2
139	Carthage, village	1	......	......	1	......	1
140	Other villages	......	3	2	8	2	4
141	Towns	......	1	4	9	6	2
142	**LEWIS COUNTY**	......	**3**	**1**	**7**	**7**	**2**
143	Lowville, village	......	......	......	1	1	......
144	Other villages	......	......	......	2	......	......
145	Towns	......	3	1	4	6	2
146	**LIVINGSTON COUNTY**	......	**4**	**4**	**14**	**4**	**5**
147	Avon, village	......	......	......	2	1	......
148	Dansville, village	......	2	1	1	......	1
149	Mt. Morris, village	......	......	......	2	......	......
150	Other villages	......	......	......	......	1	......
151	Towns	......	2	3	7	2	4
152	—Craig Colony for Epileptics, Sonyea	......	......	......	2	......	......
153	**MADISON COUNTY**	**2**	**5**	**10**	**14**	**3**	**6**
154	Oneida, city	1	1	2	3	......	2
155	Canastota, village	1	1	......	......	......	......
156	Other villages	......	1	......	4	1	......
157	Towns	......	2	8	7	2	4
158	**MONROE COUNTY**	**24**	**28**	**61**	**162**	**12**	**58**
159	Rochester, city	22	28	51	144	8	58
160	—Rochester State Hospital	......	......	......	......	......	......
161	Brockport, village	......	......	......	......	......	......
162	East Rochester, village	1	......	1	1	......	......
163	Fairport, village	......	......	1	1	2	......
164	Other villages	......	......	2	1	1	......
165	Towns	1	......	6	15	1	......

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* Dolgeville, village is located in two counties, Fulton and Herkimer. This total represents blackface type.

stillbirths) from important causes, by counties: 1921 — (Continued)

(*Concluded*)

Old age 164	EXTERNAL CAUSES							All other causes	Line number
	Accidents					Suicides 164–74	Homicides 197–200		
	Total accidents 175–96, 201–3	Drowning 182	Railroad 188-A	Automobile 188-C	Other accidents 175–96, 201–3				
5	33	3	......	4	26	4	2	91	112
4	16	......	......	2	14	2	2	49	113
1	5	......	......	......	5	1	......	27	114
......	......	......	......	......	......	......	......	1	115
......	12	3	......	2	7	1	......	14	116
9	44	3	6	10	25	4	4	87	117
2	22	2	2	5	13	1	1	45	118
......	5	1	......	1	3	......	......	8	119
1	5	......	1	2	2	......	......	5	120
6	12	......	3	2	7	3	3	29	121
4	16	4	......	3	9	3	1	50	122
1	3	......	......	1	2	......	......	5	123
1	......	......	......	......	......	......	......	6	124
2	13	4	......	2	7	3	1	39	125
1	10	5	......	1	4	......	......	7	126
1	10	5	......	1	4	......	......	7	127
18	54	8	8	13	25	4	3	106	128
5	15	2	1	5	7	1	1	24	129
1	1	......	......	......	1	......	......	1	130
......	......	......	......	......	......	......	1	7	131
2	12	2	3	1	6	......	......	17	132
......	4	......	......	2	2	......	......	16	133
1	......	......	......	......	......	......	......	1	134
2	......	......	......	......	......	......	......	13	135
7	22	4	4	5	9	3	1	27	136
17	75	8	2	9	56	12	2	198	137
6	40	4	1	7	28	4	1	83	138
......	2	......	......	1	1	......	......	10	139
2	10	......	......	1	9	4	......	47	140
9	23	4	1	......	18	4	1	58	141
6	13	6	......	1	6	1	......	47	142
1	1	......	......	......	1	......	......	8	143
1	3	1	......	......	2	......	......	10	144
4	9	5	......	1	3	1	......	29	145
5	36	3	4	6	23	5	1	106	146
......	......	......	......	......	......	......	......	3	147
1	6	......	1	1	4	1	......	11	148
......	2	1	......	1	......	......	......	8	149
1	4	......	......	......	4	......	......	15	150
3	20	2	2	4	12	4	1	27	151
......	4	......	1	......	3	......	......	42	152
4	31	4	2	8	17	7	5	85	153
1	8	......	......	1	7	3	4	33	154
......	3	2	1	......	......	1	......	10	155
1	4	1	......	2	1	......	1	13	156
2	16	1	1	5	9	3	......	29	157
7	251	19	10	65	157	47	18	578	158
1	194	7	8	44	135	36	14	455	159
[illegible]	1	......	......	......	1	1	......	43	160
[illegible]	3	......	......	1	2	1	......	10	161
......	2	......	1	......	1	1	......	2	162
[illegible]	3	3	......	......	......	1	......	4	163
[illegible]	3	......	......	......	3	1	......	18	164
	45	9	1	20	15	6	4	46	165

that part of the village located in Herkimer county. The total for the entire village is shown in

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM—					
		THE PUERPERAL STATE		MALFORMATIONS AND DISEASES OF EARLY INFANCY			
		Puerperal septicoemia 146	Other puerperal affection 143–45, 147–50	Congenital malformations 159	Premature birth 161-A	Congenital debility 160	Other causes peculiar to early infancy 161-B, 162–63
166	**MONTGOMERY COUNTY**	......	**5**	**9**	**25**	**6**	**13**
167	Amsterdam, city	......	4	4	20	5	10
168	Fort Plain, village	......	......	......	......	......	1
169	Other villages	......	......	3	3	......	1
170	Towns	......	1	2	2	1	1
171	**NASSAU COUNTY**	......	**8**	**20**	**46**	**16**	**22**
172	Glen Cove, city	......	......	4	3	1	1
173	Cedarhurst, village	......	......	......	......	1	......
174	Freeport, village	......	......	2	......	2	......
175	Lawrence, village	......	......	......	......	1	......
176	Hempstead, village	......	......	1	1	2	1
177	Lynbrook, village	......	......	......	2	......	......
178	Rockville Center, village	......	2	2	4	1	2
179	Mineola, village	......	3	......	2	......	2
180	Other villages	......	1	......	4	......	3
181	Towns	......	2	11	30	8	13
182	**NIAGARA COUNTY**	**4**	**10**	**30**	**57**	**10**	**25**
183	Lockport, city	1	2	8	3	3	6
184	Niagara Falls, city	2	4	8	28	4	11
185	North Tonawanda, city	1	2	8	12	......	2
186	La Salle, village	......	......	1	......	1	1
187	Other villages	......	......	......	1	......	1
188	Towns	......	2	5	13	2	4
189	**ONEIDA COUNTY**	**12**	**18**	**36**	**93**	**15**	**30**
190	Rome, city	2	2	6	17	2	2
191	—Rome Custodial Asylum	......	......	......	......	......	......
192	Utica, city	5	12	21	54	9	11
193	—Utica State Hospital	......	......	......	......	......	......
194	Sherrill, city	......	......	......	......	......	......
195	Whitesboro, village	......	......	1	......	......	2
196	Other villages	1	1	1	2	1	5
197	Towns	4	3	7	20	3	10
198	**ONONDAGA COUNTY**	**11**	**17**	**41**	**96**	**37**	**39**
199	Syracuse, city	8	12	29	73	31	32
200	—State Institution for Feeble-Minded Children, Syracuse	......	......	......	......	......	......
201	Baldwinsville, village	......	......	......	......	......	......
202	East Syracuse, village	1	......	......	3	1	2
203	Solvay, village	......	......	......	3	......	1
204	Other villages	......	1	4	2	......	2
205	Towns	2	4	8	15	5	2
206	**ONTARIO COUNTY**	**5**	**3**	**16**	**24**	**11**	**12**
207	Canandaigua, city	1	1	4	5	3	4
208	Geneva, city	2	......	5	11	4	4
209	Villages	......	1	2	5	1	1
210	Towns	2	1	5	3	3	3
211	**ORANGE COUNTY**	**3**	**15**	**22**	**58**	**16**	**23**
212	Middletown, city	......	2	4	7	2	8
213	—Middletown State Hospital	......	......	......	1	......	......
214	Newburgh, city	3	3	8	17	......	3
215	Port Jervis, city	......	6	1	5	3	6
216	Goshen, village	......	1	1	1	......	......
217	Highland Falls, village	......	1	......	......	1	......
218	Walden, village	......	......	2	2	1	......
219	Other villages	......	......	1	1	1	1
220	Towns	......	2	5	24	8	5
221	**ORLEANS COUNTY**	**1**	**1**	**6**	**12**	**3**	**3**
222	Albion, village	......	......	2	4	1	......
223	Medina, village	1	......	......	3	......	......
224	Other villages	......	......	1	1	......	......
225	Towns	......	1	3	4	2	3

stillbirths) from important causes, by counties: **1921 — (Continued)**

(Concluded)

Old age 164	EXTERNAL CAUSES							All other causes	Line number
	Accidents					Suicides 164–74	Homicides 197–200		
	Total accidents 175–96, 201–3	Drowning 182	Railroad 188-A	Automobile 188-C	Other accidents 175–96, 201–3				
6	69	5	11	17	36	4	....	103	166
2	40	3	3	6	28	1	....	72	167
1	4	....	....	1	3	....	....	2	168
2	8	....	2	3	3	1	....	13	169
1	17	2	6	7	2	2	....	16	170
2	90	19	9	27	35	19	10	165	171
....	1	1	....	....	....	....	....	2	172
....	2	1	....	1	....	....	....	2	173
....	4	....	1	1	2	2	1	18	174
....	1	1	....	....	....	2	....	1	175
....	....	....	....	....	....	2	....	5	176
....	3	....	1	....	2	1	....	4	177
....	5	....	4	....	1	2	....	14	178
....	29	....	....	11	18	2	1	23	179
....	6	1	1	....	4	1	....	16	180
2	39	15	2	14	8	7	8	80	181
36	123	15	10	26	72	16	11	221	182
4	23	3	....	8	12	2	2	46	183
8	64	1	8	11	44	5	7	87	184
5	15	4	1	2	8	1	....	34	185
....	2	1	....	1	....	2	....	3	186
1	5	4	1	....	....	....	....	7	187
18	14	2	....	4	8	6	2	44	188
19	140	17	8	29	86	18	8	409	189
2	24	5	2	2	15	2	....	61	190
....	....	....	....	....	....	....	....	10	191
9	76	4	3	22	47	10	8	191	192
....	2	....	....	....	2	1	....	34	193
....	....	....	....	....	....	....	....	4	194
....	2	....	....	....	2	....	....	4	195
4	7	1	1	1	4	....	....	39	196
4	29	7	2	4	16	5	....	66	197
22	169	16	12	40	101	26	9	461	198
13	121	7	7	32	75	22	8	333	199
....	....	....	....	....	....	....	....	....	200
....	2	1	....	....	1	....	....	8	201
....	1	....	1	....	....	....	....	4	202
....	1	....	....	....	1	....	....	11	203
1	6	....	1	3	2	....	....	25	204
8	38	8	3	5	22	4	1	80	205
4	38	1	9	7	21	10	1	132	206
1	10	....	2	1	7	....	1	32	207
1	9	....	1	2	6	2	....	25	208
....	3	....	....	1	2	3	....	31	209
2	16	1	6	3	6	5	....	44	210
3	117	15	14	22	66	24	3	249	211
....	18	....	3	6	9	1	....	28	212
....	3	....	....	....	3	3	....	26	213
....	24	1	1	3	19	4	....	48	214
2	14	....	2	3	9	2	....	48	215
....	1	....	....	1	....	....	....	8	216
....	....	....	....	....	....	1	....	3	217
....	2	....	....	1	1	1	....	3	218
....	8	....	1	....	7	2	....	16	219
1	47	14	7	8	18	10	3	69	220
3	20	3	1	5	11	2	....	59	221
....	5	1	....	1	3	....	....	14	222
....	3	2	....	....	1	....	....	18	223
....	2	....	....	....	2	....	....	5	224
3	10	....	1	4	5	2	....	22	225

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM—					
		THE PUERPERAL STATE		MALFORMATIONS AND DISEASES OF EARLY INFANCY			
		Puerperal septicemia 146	Other puerperal affections 143–45, 147–50	Congenital malformations 159	Premature birth 161-A	Congenital debility 160	Other causes peculiar to early infancy 161-B, 162–63
226	OSWEGO COUNTY	3	6	12	35	13	16
227	Fulton, city	1	3	1	5	2	2
228	Oswego, city	......	......	6	17	5	11
229	Villages	......	1	1	2	1	......
230	Towns	2	2	4	11	5	3
231	OTSEGO COUNTY	7	9	6	14	3	9
232	Oneonta, city	4	5	1	5	1	3
233	Cooperstown, village	2	......	......	3	......	1
234	Other villages	......	......	1	1	1	1
235	Towns	1	4	4	5	1	4
236	PUTNAM COUNTY	1	......	2	4	1	......
237	Villages	1	......	......	......	......	......
238	Towns	......	......	2	4	1	......
239	RENSSELAER COUNTY	10	6	13	45	15	16
240	Rensselaer, city	......	1	1	2	2	1
241	Troy, city	10	4	7	33	11	14
242	Hoosick Falls, village	......	......	1	......	......	......
243	Other villages	......	......	......	......	......	......
244	Towns	......	1	4	10	2	1
245	ROCKLAND COUNTY	1	3	2	11	2	5
246	Haverstraw, village	......	......	......	1	......	......
247	Nyack, village	1	1	......	5	......	1
248	Spring Valley, village	......	......	......	......	......	......
249	Suffern, village	......	1	1	......	......	1
250	Other villages	......	1	......	......	......	1
251	Towns	......	......	1	5	2	2
252	—Letchworth Village, Thiells	......	......	......	......	......	......
253	—Hospital for Crippled and Deformed Children, West Haverstraw	......	......	......	......	......	......
254	ST. LAWRENCE COUNTY	4	14	36	41	22	13
255	Ogdensburg, city	1	7	18	9	9	5
256	—St. Lawrence State Hospital	......	......	......	......	......	......
257	Canton, village	......	......	1	2	......	......
258	Gouverneur, village	......	......	......	2	2	......
259	Massena, village	......	......	1	3	2	......
260	Potsdam, village	1	......	2	3	1	2
261	Other villages	1	1	1	3	......	1
262	Towns	1	6	13	19	8	5
263	SARATOGA COUNTY	2	3	7	21	8	15
264	Saratoga Springs, city	2	1	1	5	......	3
265	Mechanicville, city	......	......	......	2	1	2
266	Ballston Spa, village	......	......	......	......	......	......
267	Waterford, village	......	......	1	2	......	......
268	Other villages	......	2	2	6	1	2
269	Towns	......	......	3	6	6	8
270	SCHENECTADY COUNTY	7	9	14	51	6	18
271	Schenectady, city	5	8	8	42	6	16
272	Scotia, village	......	......	......	1	......	......
273	Towns	2	1	6	8	......	2
274	SCHOHARIE COUNTY	1	2	2	4	3	2
275	Villages	......	1	2	......	1	......
276	Towns	1	1	......	4	2	2
277	SCHUYLER COUNTY	......	......	4	3	2	1
278	Watkins, village	......	......	1	......	1	1
279	Other villages	......	......	......	1	......	......
280	Towns	......	......	3	2	1	......

stillbirths) from important causes, by counties: 1921 — (Continued)

(*Concluded*)

Old age 164	EXTERNAL CAUSES							All other causes	Line number
	Accidents					Suicides 164–74	Homicides 197–200		
	Total accidents 175–96, 201–3	Drowning 182	Railroad 188-A	Automobile 188-C	Other accidents 175–96, 201–3				
10	66	20	3	8	35	6	1	169	226
2	14	2	......	1	11	......	1	33	227
4	24	12	2	4	6	2	......	40	228
1	7	1	......	1	5	......	......	27	229
3	21	5	1	2	13	4	......	69	230
17	46	7	6	2	31	5	1	119	231
3	13	2	3	......	8	......	1	31	232
......	4	......	......	1	3	1	......	15	233
1	5	......	1	......	4	1	......	15	234
13	24	5	2	1	16	3	......	58	235
......	10	4	......	1	5	2	......	23	236
......	2	1	......	......	1	......	......	7	237
......	8	3	......	1	4	2	......	16	238
9	100	19	7	27	47	10	4	237	239
......	7	2	......	1	4	......	......	20	240
8	60	7	1	17	35	8	2	163	241
......	3	1	......	1	1	......	......	4	242
......	......	......	......	......	......	......	......	9	243
1	30	9	6	8	7	2	2	41	244
1	44	8	6	9	21	4	4	105	245
......	......	......	......	......	......	......	......	3	246
......	7	......	2	2	3	1	......	22	247
......	......	......	......	......	......	......	......	5	248
......	10	......	1	5	4	......	......	8	249
......	10	4	1	......	5	......	......	12	250
1	17	4	2	2	9	3	4	40	251
......	......	......	......	......	......	......	......	15	252
......	......	......	......	......	......	......	......	......	253
11	61	9	3	10	39	9	2	203	254
4	21	3	1	9	8	2	......	44	255
......	3	......	......	......	3	......	......	31	256
......	......	......	......	......	......	......	1	9	257
......	1	......	......	......	1	......	1	5	258
......	4	......	......	......	4	1	......	7	259
......	2	......	......	......	2	......	......	14	260
......	2	......	......	......	2	2	......	9	261
7	28	6	2	1	19	4	......	84	262
4	57	8	4	7	38	7	3	126	263
......	16	1	2	2	11	1	1	50	264
......	4	......	......	1	3	......	1	12	265
......	1	......	......	......	1	1	......	7	266
......	2	1	......	1	......	2	1	4	267
......	7	1	......	1	5	......	......	12	268
4	27	5	2	2	18	3	......	41	269
5	56	9	5	3	39	16	1	162	270
2	37	4	1	2	30	11	1	136	271
......	1	1	......	......	......	......	......	8	272
3	18	4	4	1	9	5	......	18	273
8	16	3	......	......	13	2	......	41	274
5	2	2	......	......	......	2	......	17	275
3	14	1	......	......	13	......	......	24	276
5	11	1	......	3	7	1	......	26	277
2	3	......	......	......	3	......	......	5	278
1	1	1	......	......	......	......	......	8	279
2	7	......	......	3	4	1	......	13	280

Table 38 — STATE OF NEW YORK: *Deaths (exclusive of*

Line number	AREA	DEATHS FROM—					
		THE PUERPERAL STATE		MALFORMATIONS AND DISEASES OF EARLY INFANCY			
		Puerperal septicemia 146	Other puerperal affections 143–45, 147–50	Congenital malformations 159	Premature birth 161-A	Congenital debility 160	Other causes peculiar to early infancy 161-B, 162–63
281	SENECA COUNTY	2	3	10	10	4	2
282	Seneca Falls, village	......	1	3	2	2	1
283	Waterloo, village	......	1	2	1	1	1
284	Other villages	......	......	......	......	......	......
285	Towns	2	1	5	7	1	......
286	—Willard State Hospital	......	......	......	......	......	......
287	STEUBEN COUNTY	5	6	11	29	13	9
288	Corning, city	1	2	2	6	3	2
289	Hornell, city	1	......	2	9	2	3
290	Bath, village	......	2	......	2	1	......
291	Other villages	1	1	......	1	2	3
292	Towns	2	1	7	11	5	1
293	—Soldiers' and Sailors' Home, Bath	......	......	......	......	......	......
294	SUFFOLK COUNTY	8	1	18	52	7	14
295	Amityville, village	......	......	1	2	......	......
296	Babylon, village	1	......	1	2	......	......
297	Greenport, village	1	......	2	3	1	2
298	Patchogue, village	......	......	1	2	......	1
299	Sag Harbor, village	......	......	1	1	......	......
300	Southampton, village	......	1	......	4	......	2
301	Other villages	1	......	......	......	1	......
302	Towns	5	......	12	36	5	8
303	—Central Islip State Hospital	......	......	......	......	......	1
304	—Kings Park State Hospital	......	......	......	2	......	......
305	SULLIVAN COUNTY	3	2	5	7	3	6
306	Villages	1	......	......	1	......	1
307	Towns	2	2	5	6	3	5
308	TIOGA COUNTY	1	......	2	10	3	1
309	Owego, village	......	......	......	6	1	......
310	Waverly, village	......	......	......	2	......	1
311	Other villages	1	......	......	1	......	......
312	Towns	......	......	2	1	2	......
313	TOMPKINS COUNTY	5	1	4	15	1	8
314	Ithaca, city	3	1	2	11	......	5
315	Villages	1	......	......	......	......	......
316	Towns	1	......	2	4	1	3
317	ULSTER COUNTY	4	6	9	32	6	8
318	Kingston, city	2	4	2	17	......	6
319	Ellenville, village	1	......	1	......	......	......
320	Saugerties, village	......	......	1	4	1	......
321	Other villages	......	......	......	1	......	......
322	Towns	1	2	5	10	5	2
323	—Eastern New York Reformatory, Napanoch	......	......	......	......	......	......
324	WARREN COUNTY	2	2	3	20	2	8
325	Glens Falls, city	1	1	1	15	1	5
326	Villages	......	......	......	......	......	......
327	Towns	1	1	2	5	1	3
328	WASHINGTON COUNTY	......	3	7	15	3	3
329	Fort Edward, village	......	......	......	1	1	......
330	Granville, village	......	1	......	1	......	......
331	Hudson Falls, village	......	......	1	2	......	1
332	Whitehall, village	......	......	......	3	1	1
333	Other villages	......	......	2	......	......	......
334	Towns	......	2	4	8	1	1
335	—Great Meadow Prison, Comstock	......	......	......	......	......	......

stillbirths) from important causes, by counties: **1921 — (Continued)**

(Concluded)

Old age 164	EXTERNAL CAUSES							All other causes	Line number
	Accidents								
	Total accidents 175–96, 201–3	Drowning 182	Railroad 188-A	Automobile 188-C	Other accidents 175–96, 201–3	Suicides 164–74	Homicides 197–200		
5	30	2	2	2	24	5	....	65	281
......	10	2	......	1	7	....	....	15	282
1	5	......	1	......	4	....	....	6	283
....	......	......	......	......	......	....	....	3	284
4	10	......	1	1	8	3	....	9	285
....	5	......	......	......	5	2	....	32	286
11	54	1	10	13	30	15	4	182	287
....	8	......	3	2	3	3	1	24	288
1	13	......	3	3	7	4	1	45	289
1	3	......	......	1	2	....	....	12	290
1	4	1	......	......	3	3	....	33	291
8	22	......	4	7	11	5	2	63	292
....	4	......	......	......	4	....	....	5	293
6	111	21	7	28	55	19	3	477	294
1	4	......	1	......	3	1	....	30	295
....	6	1	1	2	2	....	1	8	296
....	1	1	......	......	......	....	....	6	297
....	4	......	......	2	2	....	....	5	298
....	1	......	......	......	1	....	....	4	299
....	12	......	......	5	7	3	....	18	300
....	4	1	......	......	3	....	....	5	301
5	75	18	4	19	34	8	2	121	302
....	1	......	......	......	1	4	....	180	303
....	3	......	1	......	2	3	....	100	304
5	32	14	2	8	8	5	1	55	305
2	3	......	......	1	2	....	....	5	306
3	29	14	2	7	6	5	1	50	307
6	18	2	3	3	10	6	....	75	308
....	3	......	......	1	2	1	....	17	309
....	1	......	......	......	1	....	....	14	310
....	4	1	......	1	2	1	....	10	311
6	10	1	3	1	5	4	....	34	312
5	31	7	2	2	20	6	3	75	313
2	17	4	1	1	11	2	1	41	314
2	......	......	......	......	......	2	1	9	315
1	14	3	1	1	9	2	1	25	316
9	70	24	7	8	31	12	1	179	317
3	25	2	4	6	13	5	1	77	318
....	3	......	......	1	2	....	....	4	319
1	......	......	......	......	......	1	....	2	320
....	2	......	......	......	2	....	....	16	321
5	40	22	3	1	14	6	....	80	322
....	......	......	......	......	......	....	....	....	323
7	31	6	1	6	18	4	....	71	324
1	21	2	......	5	14	2	....	47	325
....	......	......	......	......	......	....	....	1	326
6	10	4	1	1	4	2	....	23	327
8	35	7	5	3	20	10	....	87	328
....	3	1	......	......	2	1	....	10	329
2	1	......	......	1	......	1	....	4	330
....	4	3	......	......	1	....	....	4	331
1	4	1	......	......	3	....	....	10	332
1	2	......	......	1	1	2	....	23	333
4	21	2	5	1	13	6	....	36	334
....	......	......	......	......	......	....	....	....	335

Table 38 — STATE OF NEW YORK: ***Deaths (exclusive of***

Line number	AREA	DEATHS FROM—					
		THE PUERPERAL STATE		MALFORMATIONS AND DISEASES OF EARLY INFANCY			
		Puerperal septicemia 146	Other puerperal affections 143–45, 147–50	Congenital malformations 159	Premature birth 161-A	Congenital debility 160	Other causes peculiar to early infancy 161-B, 162–63
336	WAYNE COUNTY	2	4	5	12	4	12
337	Clyde, village	......	......	......	3	......	2
338	Lyons, village	......	......	1	2	......	1
339	Newark, village	1	......	2	......	......	1
340	Other villages	......	1	1	1	1	1
341	Towns	1	3	1	6	3	5
342	—Newark State Custodial Asylum	......	......	......	......	......	2
343	WESTCHESTER COUNTY	18	26	39	162	18	62
344	Mt. Vernon, city	2	7	8	17	2	7
345	New Rochelle, city	......	2	5	15	1	5
346	Ossining, village	1	1	......	4	......	8
347	—Sing Sing Prison	......	......	......	......	......	......
348	Peekskill, village	......	......	5	5	......	2
349	White Plains, city	......	2	......	18	3	1
350	Port Chester, village	4	......	......	9	......	5
351	Yonkers, city	8	9	11	46	6	17
352	Bronxville, village	......	3	......	4	1	1
353	Dobbs Ferry, village	2	......	1	7	......	1
354	Hastings-on-Hudson, village	......	......	......	2	......	1
355	Irvington, village	......	......	......	......	......	......
356	Mamaroneck, village	1	......	1	4	......	......
357	Mt. Kisco, village	......	......	2	3	......	2
358	North Tarrytown, village	......	......	......	......	......	1
359	Pleasantville, village	......	1	......	......	......	......
360	Rye, village	......	......	1	......	......	......
361	Tarrytown, village	......	......	......	1	1	2
362	Scarsdale, village	......	......	......	......	......	......
363	Tuckahoe, village	......	......	......	2	......	1
364	Other villages	......	1	......	5	3	......
365	Towns	......	......	5	20	1	5
366	—State Reformatory for Women, Bedford	......	......	......	......	......	3
367	WYOMING COUNTY	2	2	11	14	4	3
368	Perry, village	1	1	3	4	2	......
369	Warsaw, village	1	1	......	1	......	......
370	Other villages	......	......	1	1	1	1
371	Towns	......	......	7	8	1	2
372	YATES COUNTY	......	......	5	5	1	2
373	Penn Yan, village	......	......	2	......	......	......
374	Other villages	......	......	1	......	......	1
375	Towns	......	......	2	5	1	1

***stillbirths) from important causes, by counties:* 1921 — (Concluded)**

(Concluded)

Old age 164	EXTERNAL CAUSES							All other causes	Line number
	Accidents					Suicides 164–74	Homicides 197–200		
	Total accidents 175–96, 201–3	Drowning 182	Railroad 188-A	Automobile 188-C	Other accidents 175–96, 201–3				
13	31	5	3	6	17	9	......	115	336
......	1	......	......	......	1	......	......	3	337
3	2	......	......	......	2	1	......	14	338
......	6	......	1	......	5	1	......	12	339
......	1	......	......	......	1	......	......	21	340
10	21	5	2	6	8	7	......	59	341
......	......	......	......	......	......	......	......	6	342
16	241	25	13	68	134	39	8	470	343
2	15	1	1	7	6	6	......	47	344
2	20	2	1	7	10	......	......	38	345
1	13	......	......	3	10	......	......	17	346
......	11	......	......	......	11	1	......	1	347
2	14	1	2	4	7	2	......	26	348
......	14	......	......	8	6	2	1	38	349
......	19	......	......	6	13	1	......	30	350
3	56	4	2	16	34	11	4	111	351
......	2	......	......	2	......	......	......	5	352
......	5	......	1	1	3	......	......	7	353
......	1	......	1	......	......	2	......	2	354
......	3	3	......	......	......	......	......	2	355
......	4	1	1	1	1	1	......	6	356
1	1	......	......	1	......	......	......	10	357
......	1	......	......	......	1	2	......	4	358
1	1	......	......	1	......	......	......	3	358
......	2	......	......	......	2	1	......	5	360
2	9	1	1	2	5	......	......	12	361
......	2	1	......	......	1	1	......	......	362
......	1	......	......	1	......	2	......	3	363
......	3	......	......	......	3	......	......	17	364
2	44	11	3	9	21	6	3	85	365
......	......	......	......	......	......	1	......	1	366
5	26	2	......	7	17	3	......	52	367
......	5	2	......	1	2	1	......	6	368
1	8	......	......	4	4	......	......	7	369
1	7	......	......	......	7	2	......	10	370
3	6	......	......	2	4	......	......	29	371
1	19	4	1	3	11	2	1	32	372
......	8	......	......	2	6	1	......	18	373
1	3	......	......	......	3	......	......	3	374
......	8	4	1	1	2	1	1	16	375

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

NOTE.— Important State institutions and certain other large institutions, whose inmates are individual cities and towns in which these institutions are located, are exclusive of the deaths in District number is obtained by prefixing County Number to Number before such district,

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	Deaths at age of — Under 1 year	1-4 years	60 years and over	Cases and: Typhoid fever, 1: Cases	Deaths	Measles, 7: Cases	Deaths	Scarlet fever, 8: Cases	Deaths
01	ALBANY COUNTY	3,678	108	2,641	303	120	1,181	52	8	1,474	7	216	5
01	**Albany, city**	2,352	63	1,745	182	70	761	25	5	911	2	129	3
02	**Cohoes, city**	464	14	292	48	22	106	7	2	23	1	29	1
03	**Watervliet, city**	282	10	180	24	15	72	7	1	134	....	9	....
50	Berne	20	....	26	3	....	20	....	....	38	....	....	....
51	Bethlehem	48	3	53	1	3	38	....	....	66	1	8	....
52	Coeymans	61	2	44	7	3	25	1	....	7	....	9	....
23	*Ravena, village*	35	3	18	3	....	10	1	....	....	....	4	....
53	Colonie	203	7	105	17	3	49	4	....	52	1	7	....
*54	(Green Island)	....	....	....	....	....	....	....	....	....	....	....	....
20	*Green Island, village*	81	5	59	10	3	20	6	....	114	1	2	1
55	Guilderland	26	1	27	4	1	16	....	....	8	....	2	....
21	*Altamont, village*	11	....	15	....	....	11	....	....	1	....	2	....
56	Knox	17	....	16	1	....	11	1	....	45	1	....	....
57	New Scotland	29	....	21	....	....	16	....	....	21	....	5	....
22	*Voorheesville, village*	4	....	3	1	....	2	....	....	31	....	8	....
58	Rensselaerville	24	....	19	1	....	13	....	....	....	....	....	....
59	Westerlo	21	....	20	1	....	11	....	....	23	....	2	....
02	ALLEGANY COUNTY	697	35	520	37	13	325	25	6	320	1	153	2
50	Alfred	11	1	3	....	....	2	2	....	1	....	4	....
20	*Alfred, village*	3	....	15	....	1	11	....	....	1	....	....	....
51	Allen	11	1	3	....	....	3	....	....	....	....	....	....
52	Alma	17	1	8	3	....	3	1	....	....	....	5	....
53	Almond	21	....	10	....	....	7	....	....	....	....	8	....
54	Amity	27	1	5	2	....	3	....	....	....	....	10	1
21	*Belmont, village*	25	....	20	1	....	12	....	....	....	....	9	....
55	Andover	17	2	11	3	....	5	....	....	....	....	4	....
22	*Andover, village*	12	1	16	....	....	12	....	....	....	....	12	....
56	Angelica	8	....	17	1	....	14	....	....	....	....	....	....
23	*Angelica, village*	19	1	15	1	....	11	....	1	1	....	....	....
57	Belfast	17	....	17	2	1	8	2	....	....	....	....	....
58	Birdsall	9	1	7	1	....	6	....	....	....	....	....	....
59	Bolivar	16	2	9	1	2	4	1	....	36	....	2	....
24	*Bolivar, village*	23	1	13	1	2	8	....	....	47	....	8	....
60	Burns	11	....	7	....	....	6	....	....	....	....	....	....
25	*Canaseraga, village*	7	....	17	2	....	8	....	....	....	....	....	....
61	Caneadea	23	....	18	2	1	14	....	....	36	....	2	....
30	*Oramel, village*	....	....	....	....	....	....	....	....	....	....	....	....
62	Centerville	15	....	4	....	....	3	....	....	50	....	....	....
63	Clarksville	13	....	6	....	....	4	....	....	....	....	....	....
64	Cuba	7	....	10	....	....	5	....	....	....	....	2	....
26	*Cuba, village*	37	4	32	....	1	20	1	....	1	....	2	....
65	Friendship	8	1	4	....	....	1	....	....	1	....	....	....
27	*Friendship, village*	12	2	21	1	....	17	....	....	1	....	....	....
66	Genesee	19	1	13	1	....	11	....	....	9	....	3	....
67	Granger	7	1	5	....	....	3	....	....	2	....	....	....
68	Grove	14	1	5	....	....	4	....	....	....	....	....	....
69	Hume	27	1	21	2	....	14	1	....	116	1	2	....
70	Independence	21	1	10	3	1	5	1	....	....	....	2	....
71	New Hudson	7	....	5	....	....	4	....	....	....	....	....	....
72	Rushford	19	1	15	1	....	13	....	....	14	....	....	....
73	Scio	26	....	22	1	1	13	5	1	....	....	....	....
74	Ward	6	1	5	....	1	3	....	....	....	....	....	....
75	Wellsville	35	2	18	1	....	8	2	1	....	....	8	....
28	*Wellsville, village*	88	5	90	4	1	49	3	1	1	....	65	....
76	West Almond	16	....	4	1	....	2	6	....	....	....	....	....
77	Willing	14	1	11	....	1	5	....	2	....	....	2	1

* Coterminous with

***and deaths by broad age groups, in each registration district; also cases and deaths from causes:* 1921**

mainly nonresidents, have been constituted separate registration districts, and the deaths in the these institutions, the latter appearing at end of county.
e. g. 101=Albany city; cities (c.) in bold face, villages (v.) in *italics*, towns in Roman type.

DEATHS FROM —															
						TUBERCULOSIS				PNEUMONIA					
Whooping cough, 9		Diphtheria, 10		Influenza, 11		Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101	Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	District number
533	20	404	31	160	17	360	169	51	30	75	79	255	68	1,877	01
333	7	296	21	127	11	237	116	33	21	44	51	171	33	1,260	01
90	3	27	4	32	2	50	22	4	4	11	8	21	18	195	02
35	5	25	3	1	2	45	11	8	2	5	6	23	10	112	03
1	....	....	....	....	...	1	....	....	....	2	3	1	....	20	50
10	....	25	....	....	...	2	3	1	....	1	2	6	....	40	51
....	...	12	2	....	...	3	2	....	....	2	....	3	1	34	52
2	....	*8*	*1*	....	...	*1*	*1*	....	....	*1*	....	*3*	....	*12*	*23*
21	3	2	....	....	1	9	6	2	2	2	4	9	4	73	53
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	*54
17	*1*	*5*	....	....	*1*	*6*	*4*	*1*	....	*3*	*3*	*4*	*1*	*40*	*20*
8	1	1	....	....	...	3	....	1	1	1	....	4	1	19	55
....	....	....	....	....	...	*1*	*2*	....	....	....	....	*5*	....	*6*	*21*
2	....	....	....	....	...	....	....	....	....	1	....	2	....	12	56
1	....	2	....	....	...	1	....	....	....	....	....	1	....	20	57
8	....	....	....	....	...	....	....	....	....	....	....	....	....	*3*	*22*
....	....	....	....	....	...	....	1	....	....	2	....	1	....	15	58
5	....	1	....	....	...	1	1	1	....	....	2	1	....	16	59
97	3	56	6	13	7	20	13	1	1	16	17	45	6	394	02
1	....	....	....	....	...	1	....	....	....	....	....	....	....	3	50
....	....	....	....	....	*1*	....	....	....	....	*1*	....	*1*	....	*10*	*20*
....	....	....	....	2	...	....	....	....	....	....	....	....	....	3	51
....	....	2	....	...	...	....	....	...	....	....	....	....	1	6	52
1	....	....	....	....	...	2	1	....	....	....	....	....	....	9	53
4	....	....	....	....	...	....	....	....	....	....	....	1	....	3	54
3	....	..	....	....	...	....	*1*	....	....	....	*1*	*1*	....	*17*	*21*
5	....	....	....	....	1	....	1	....	....	1	1	1	....	7	55
1	....	*1*	....	....	...	*2*	....	....	....	*1*	....	....	....	*15*	*22*
....	....	....	....	....	1	....	....	....	....	....	1	1	1	13	56
....	....	....	....	....	...	*1*	....	....	....	....	....	*2*	....	*13*	*23*
6	1	2	1	....	...	....	....	1	...	1	1	1	....	12	57
....	....	....	....	..	...	....	....	....	....	....	....	....	....	7	58
8	1	1	1	..	...	....	....	....	....	....	1	....	....	6	59
7	....	*3*	....	....	...	....	....	....	....	*1*	*1*	*2*	....	*9*	*24*
....	....	....	....	....	...	....	....	....	....	....	....	....	....	7	60
....	....	....	....	....	...	*1*	....	....	....	....	*1*	*2*	....	*14*	*25*
19	....	2	..	1	.	....	1	....	....	....	1	1	1	14	61
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	*30*
6	....	2	....	....	1	....	....	....	....	....	....	1	....	2	62
....	....	....	....	....	...	....	....	....	....	....	....	1	....	5	63
....	....	2	2	....	...	....	....	....	....	....	....	2	....	6	64
5	....	*3*	*1*	....	...	*2*	*1*	....	....	*1*	....	*2*	....	*27*	*26*
6	....	....	....	....	...	....	....	....	....	....	....	....	....	4	65
7	....	....	....	....	*1*	*1*	....	....	....	....	*2*	*2*	....	*16*	*27*
....	....	....	....	....	...	....	....	....	....	1	1	2	....	9	66
....	....	4	....	1	...	....	....	....	....	....	1	....	....	4	67
....	....	....	....	....	...	....	....	....	....	....	....	....	....	5	68
....	. .	9	....	9	...	1	1	....	....	2	1	4	....	12	69
....	....	....	....	....	...	....	....	....	....	....	....	....	2	8	70
....	....	....	....	....	...	....	1	....	....	....	....	....	....	4	71
9	....	2	....	....	...	....	....	....	....	....	....	1	....	14	72
....	....	7	1	....	...	....	....	....	....	2	....	1	....	17	73
....	....	....	....	....	1	....	....	....	....	....	....	....	....	4	74
1	....	5	....	....	1	1	1	....	....	2	1	3	1	8	75
3	....	*9*	....	....	...	*7*	*5*	....	*1*	*3*	*1*	*14*	....	*65*	*28*
5	1	....	....	....	...	....	....	....	....	....	....	....	....	3	76
....	....	....	....	....	...	....	....	....	....	....	1	1	....	6	77

Green Island, vill age.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
								Cases	Deaths	Cases	Deaths	Cases	Deaths
	ALLEGANY COUNTY—(*Concl'd*)												
78	Wirt	23	1	10	2	....	4	....	....	3	....	2	....
29	*Richburg, village*	*8*	....	....	....	....	....	....	....	....	....	*1*	....
03	BROOME COUNTY	2,831	80	1,683	225	77	727	22	4	1,934	11	554	8
01	**Binghamton, city**	1,513	39	816	124	41	319	11	3	806	3	290	5
50	Barker	24	....	14	4	1	6	....	....	78	1	8	....
51	Binghamton	13	....	3	1	....	2	....	....	....	....	....	....
52	Chenango	19	....	43	....	2	9	....	....	30	....	6	....
53	Colesville	46	....	36	3	....	29	....	....	33	....	5	....
54	Conklin	14	....	9	1	....	1	....	....	1	....	....	....
55	Dickinson	31	1	44	4	2	26	....	....	6	1	14	....
20	*Port Dickinson, village*	*12*	*2*	*15*	....	*1*	*6*	....	....	*17*	*1*	*1*	....
56	Fenton	26	....	16	1	1	11	1	....	12	....	12	....
57	Kirkwood	13	....	8	2	....	3	....	....	3	....	2	....
58	Lisle	10	....	13	....	2	8	....	....	12	....	5	....
21	*Lisle, village*	*4*	....	*9*	....	....	*8*	....	....	....	....	*3*	....
59	Maine	19	2	12	....	....	10	....	....	10	....	4	....
60	Nanticoke	13	....	8	1	....	5	....	....	4	....	....	....
61	Sanford	37	1	27	2	....	15	....	....	27	....	....	....
22	*Deposit, village*	*22*	*1*	*21*	....	*1*	*15*	....	....	*58*	....	*2*	....
[*22**	*Deposit, village (1255)*	*48*	*2*	*34*	*3*	*1*	*25*	....	....	*90*	....	*2*	....
62	Triangle	19	....	8	....	1	7	....	....	13	....	1	....
23	*Whitney Point, village*	*11*	....	*7*	*1*	....	*6*	....	....	*35*	....	....	....
63	Union	123	8	34	9	6	10	....	....	80	2	22	1
24	*Endicott, village*	*341*	*9*	*114*	*33*	*9*	*30*	....	....	*95*	*1*	*15*	*2*
25	*Johnson City, village*	*496*	*15*	*135*	*35*	*8*	*41*	*7*	*1*	*596*	*2*	*138*	....
26	*Union, village*	*23*	....	*12*	....	....	*6*	*1*	....	*73*	....	*6*	....
64	Vestal	38	....	24	3	2	12	1	....	4	....	5	....
65	Windsor	30	2	18	1	....	12	1	....	2	....	10	....
27	*Windsor, village*	*3*	....	*8*	....	....	*7*	....	....	....	....	*2*	....
10	Binghamton State Hospital	1	....	231	....	....	123	....	....	....	....	3	....
04	CATTARAUGUS COUNTY	1,668	74	994	131	39	510	35	3	314	1	124	3
01	**Olean, city**	594	27	295	47	11	117	6	1	49	....	53	1
02	**Salamanca, city**	241	10	112	22	8	44	2	....	26	1	4	2
50	Allegany	29	1	26	1	....	11	....	....	1	....	7	....
20	*Allegany, village*	*19*	*1*	*18*	*1*	*2*	*11*	....	....	....	....	*4*	....
51	Ashford	38	....	15	3	2	5	....	....	20	....	12	....
52	Carrolton	5	2	5	....	....	4	....	....	1	....	1	....
21	*Limestone, village*	*6*	....	*6*	*2*	....	*3*	....	....	....	....	....	....
53	Cold Spring (2)	20	....	11	2	....	5	....	....	4	....	5	....
54	Conewango	25	1	14	2	1	9	2	....	6	....	....	....
22	*East Randolph, village (78)*	*4*	....	*7*	....	....	*5*	*3*	*1*	*1*	....	*1*	....
55	Dayton	27	1	19	2	2	11	1	....	....	....	....	....
30	*South Dayton, village*	*10*	*1*	*11*	*2*	....	*7*	*1*	....	....	....	....	....
56	East Otto	25	2	12	1	....	5	....	....	....	....	....	....
57	Elko	3	....	7	....	2	3	....	....	....	....	....	....
58	Ellicottville	15	....	14	2	1	7	....	....	1	....	....	....
23	*Ellicottville, village*	*12*	....	*18*	*1*	....	*16*	....	....	*8*	....	....	....
59	Farmersville	22	1	15	2	1	9	....	....	11	....	2	....
60	Franklinville	23	2	7	....	....	5	....	....	....	....	....	....
24	*Franklinville, village*	*42*	*1*	*25*	*1*	*1*	*14*	....	....	*1*	....	*2*	....
61	Freedom	22	3	19	4	....	7	....	....	....	....	....	....
62	Great Valley (1)	20	2	12	3	....	9	2	....	....	....	1	....
63	Hinsdale	10	....	10	1	....	8	4	....	5	....	....	....
64	Humphrey	21	1	2	....	....	1	....	....	....	....	....	....
65	Ischua	16	....	6	....	....	6	....	....	1	....	....	....
66	Leon	17	....	10	....	....	6	1	....	9	....	2	....
67	Little Valley	8	1	9	2	1	4	....	....	....	....	....	....

* Deposit, village, located in two counties, Broome and

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary, and acute miliary 31, 37c		Other forms, 32-37-a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	2	....	....	....	....	....	....	....	....	1	2	....	7	78
....	....	....	....	....	....	*1*	....	....	....	....	....	....	....	....	*89*
171	3	333	16	64	13	189	103	12	17	45	71	131	42	1,219	03
48	1	199	13	58	6	148	37	9	10	19	38	76	32	573	01
....	....	....	....	....	1	....	....	....	....	1	....	1	....	10	50
....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	51
....	....	3	1	....	....	1	30	....	....	....	....	....	....	12	52
....	....	8	....	....	....	3	1	1	....	1	2	3	1	28	53
....	....	2	....	....	....	1	1	....	....	....	....	1	....	7	54
6	....	....	....	....	1	1	....	....	1	....	1	6	1	33	55
....	....	5	....	....	....	2	....	....	....	*1*	*1*	*1*	....	*9*	*20*
....	....	2	....	....	1	....	1	....	....	....	....	1	....	18	56
....	....	3	....	....	....	1	....	....	....	1	2	....	....	5	57
....	....	*1*	....	....	....	1	1	....	....	....	3	1	....	*8*	58
....	....	....	....	....	....	....	1	....	....	....	....	....	....	8	*21*
2	....	....	....	....	....	1	....	....	....	....	1	2	....	9	59
....	....	1	....	....	....	....	....	....	....	....	....	....	....	8	60
34	....	....	....	1	....	2	....	....	....	1	1	7	....	18	61
42	*1*	*4*	....	*1*	....	....	....	....	....	*1*	*3*	*1*	....	*15*	*22*
69	*1*	*4*	....	*3*	....	*1*	....	....	....	*3*	*4*	*2*	....	*24*	*22]
2	....	....	....	....	1	....	....	....	....	....	1	....	....	6	62
....	....	....	....	....	*1*	*1*	....	....	....	*2*	....	*1*	....	*3*	*23*
5	....	24	1	....	....	4	4	....	1	1	4	2	2	16	63
10	*1*	*11*	....	....	....	*2*	*4*	....	*1*	*3*	*4*	7	*4*	87	*24*
16	....	*56*	*1*	*3*	....	*18*	*5*	*2*	*2*	*3*	*2*	*11*	*1*	*107*	*25*
4	....	*9*	....	....	....	*1*	*1*	....	....	....	*2*	....	....	*9*	*26*
2	....	2	....	....	....	....	....	....	....	1	1	....	....	22	64
....	....	1	....	....	....	....	1	....	....	....	....	1	1	15	65
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*8*	*27*
....	....	2	....	1	2	2	16	....	2	10	5	9	....	187	10
184	4	137	6	8	6	68	50	5	8	24	39	85	24	741	04
98	3	41	2	1	1	29	7	4	3	6	10	33	14	214	01
....	....	11	....	....	....	5	5	....	1	3	6	12	3	79	02
2	1	1	....	....	....	1	11	....	....	2	....	2	....	10	50
....	....	*3*	....	....	....	....	*1*	....	....	....	*1*	*1*	....	*15*	*20*
....	....	....	....	1	1	1	2	....	....	....	2	....	....	10	51
....	....	....	....	....	....	2	....	....	....	....	....	....	....	5	52
....	....	....	....	....	....	....	....	....	....	*1*	....	....	....	*5*	*21*
....	....	....	....	....	....	....	....	....	....	1	3	....	....	7	53
....	....	....	....	....	....	....	....	....	1	1	....	....	....	12	54
....	....	....	....	....	....	....	....	....	....	*1*	....	....	....	*5*	*22*
....	....	3	1	....	....	1	1	....	....	....	3	1	....	13	55
3	....	*1*	....	....	....	....	....	....	....	*1*	....	*1*	....	*9*	*30*
....	....	....	....	....	....	1	1	....	....	....	....	2	....	9	56
....	....	1	....	....	....	2	1	....	....	....	....	1	....	5	57
2	....	1	....	....	....	....	1	....	1	....	....	....	....	12	58
1	....	*1*	....	....	....	*1*	....	....	....	....	....	1	....	*17*	*23*
41	....	2	....	....	1	....	....	....	....	1	1	2	....	10	59
....	....	2	....	....	....	....	1	....	....	....	....	....	....	6	60
....	....	*36*	*1*	....	*1*	*4*	....	....	....	....	*1*	*1*	....	*21*	*24*
1	....	1	1	....	....	1	1	....	....	....	1	....	....	16	61
....	....	....	....	....	....	1	1	1	....	....	....	1	....	10	62
....	....	....	....	....	....	....	....	....	....	....	1	....	....	9	63
2	....	....	....	....	....	....	....	....	....	....	....	....	....	2	64
....	....	....	....	....	....	....	....	....	....	....	....	1	....	5	65
5	....	....	....	....	....	....	1	....	1	....	....	2	....	6	66
....	....	....	....	....	....	....	1	....	....	1	....	....	1	6	67

Delaware. Total for entire village given in bracketed line.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF —			CASES AND					
					Under 1 year	1-4 years	60 years and over	Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
								Cases	Deaths	Cases	Deaths	Cases	Deaths
	CATTARAGUS CO.—(*Concluded*)												
25	*Little Valley, village*	*17*	....	*22*	....	*1*	*17*	....	....	....	....	*4*	....
68	Lyndon	16	....	4	3	....	1	....	....	....	....	....	....
69	Machias	36	1	42	4	....	32	....	....	2	....	....	....
70	Mansfield	18	....	7	....	....	6	....	....	....	....	1	....
71	Napoli	15	1	2	....	....	2	....	....	....	....	8	....
72	New Albion	13	....	5	....	1	2	....	....	2	....	....	....
26	*Cattaraugus, village*	17	1	25	1	....	17	....	....	4	....	2	....
73	Olean	26	2	8	2	1	3	....	....	2	....	1	....
74	Otto	17	1	7	1	1	4	6	....	4	....	....	....
75	Perrysburg (1)	19	....	14	....	....	8	2	....	9	....	2	....
32	*Perrysburg, village*	*4*	*1*	*4*	*1*	....	*1*	*2*	....	*1*	....	....	....
76	Persia	10	2	8	1	....	5	....	....	11	....	....	....
(*27*)	*Gowanda, village* (*pt.*) (3)	*62*	....	*36*	*7*	....	*16*	*1*	....	*75*	....	....	....
[*27**	*Gowanda, village* (*1458*)	*62*	....	*36*	*7*	....	*16*	*1*	....	*111*	....	....	....
77	Portville	34	1	17	4	....	7	....	....	7	....	2	....
28	*Portville, village*	*5*	*1*	*11*	*1*	....	*6*	*1*	*1*	*1*	....	*5*	....
78	Randolph (22)	13	....	9	1	....	4	....	....	10	....	....	....
29	*Randolph, village*	*24*	*1*	*20*	*2*	*1*	*14*	*1*	....	*32*	....	....	....
79	Red House (2)	7	1	12	1	1	7	....	....	1	....	....	....
80	Salamanca (3)	11	1	6	....	....	4	....	....	....	....	1	....
81	South Valley	4	....	5	....	1	2	....	....	....	....	....	....
82	Yorkshire	20	2	13	1	....	10	....	....	9	....	....	....
31	*Delevan, village*	*6*	*1*	*12*	....	....	*10*	....	....	....	....	*4*	....
05	CAYUGA COUNTY	1,268	38	897	89	24	511	16	4	81	....	194	3
01	Auburn, city	898	26	489	59	19	237	9	3	16	....	108	3
50	Aurelius	16	....	10	2	....	6	....	....	....	....	....	....
20	*Cayuga, village*	*7*	....	*4*	*1*	....	*1*	....	....	....	....	....	....
51	Brutus	13	....	12	1	....	6	....	....	....	....	9	....
21	*Weedsport, village*	*25*	....	*20*	....	....	*18*	....	....	....	....	*8*	....
52	Cato	22	....	7	....	....	4	1	....	14	....	1	....
22	*Cato, village* (*56*)	*4*	....	*7*	....	....	*5*	....	....	....	....	*1*	....
23	*Meridian, village*	*1*	....	*3*	....	....	*3*	....	....	....	....	....	....
53	Conquest	19	....	14	2	....	10	1	1	....	....	....	....
54	Fleming	14	....	7	....	....	5	....	....	....	....	8	....
55	Genoa	21	2	22	3	1	11	....	....	18	....	....	....
56	Ira (22)	20	....	13	....	....	11	....	....	....	....	1	....
57	Ledyard	21	....	16	1	....	13	....	....	....	....	11	....
24	*Aurora, village*	*4*	....	*6*	*1*	*1*	*2*	....	....	1	....	....	....
58	Locke	22	2	17	4	....	10	1	....	....	....	....	....
59	Mentz	14	....	12	2	....	7	....	....	....	....	....	....
25	*Port Byron, village*	*14*	*1*	*13*	*2*	*1*	*8*	*1*	....	....	....	*8*	....
60	Montezuma	8	....	6	....	....	3	....	....	....	....	....	....
61	Moravia	15	....	10	....	....	7	....	....	1	....	....	....
26	*Moravia, village*	*13*	*1*	*28*	....	....	*22*	....	....	*1*	....	....	....
62	Niles	18	1	21	1	....	16	....	....	....	....	1	....
63	Owasco	11	....	12	....	1	8	....	....	2	....	6	....
64	Scipio	17	1	14	....	1	12	1	....	8	....	1	....
65	Sempronius	13	....	9	....	....	8	....	....	....	....	2	....
66	Sennett	20	....	31	1	....	24			....	....	13	....
67	Springport	6	1	3	....	....	2	....	....	1	....	....	....
27	*Union Springs, village*	*4*	....	*17*	....	....	*12*	....	....	*2*	....	....	....
68	Sterling	30	1	20	3	....	10	....	....	....	....	6	....
28	*Fairhaven, village*	*8*	*1*	*7*	....	....	*4*	....	....	....	....	....	....
69	Summer Hill	10	....	7	1	....	3	1	....	....	....	....	....
70	Throop	11	....	12	1	....	7	1	....	....	....	9	....
71	Venice	17	1	13	1	....	9	....	....	17	....	....	....
72	Victory	22	....	10	3	....	6	....	....	....	....	1	....
10	Auburn State Prison	....	....	5	....	....	1	....	....	....	....	....	....

* Gowanda, village, located in two counties, Cattaraugus and Erie. Total for entire village given

***and deaths by broad age groups, in each registration district; also cases and deaths from causes:* 1921 — (Continued)**

Deaths from —															
Whooping-cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary, and acute miliary 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
											3	*3*		*18*	*25*
										1			1	2	68
5		6		4		2	1			1	2	3		35	69
		3	1											6	70
														2	71
												1		4	72
3					*1*	*4*	*1*		*1*			*1*		*21*	*26*
						1	1						1	6	73
					1							1	1	4	74
2		1					5					2		7	75
3							*1*			*1*	*1*			*1*	*32*
		1				1					1			7	†76
4		*7*		*1*		*5*	*2*				*4*	*4*		26	(*27*)
4		*7*		*1*		*5*	*2*				*4*	*4*		*26*	**27*]
2		1				2				2		1	1	13	77
				1									*1*	*9*	*28*
														9	78
		1				*2*						*1*		*19*	*29*
						1				1				11	79
10		7					1					1		4	80
							1					2		2	81
		1										2	1	10	82
		5				*1*	*2*				*1*	*2*		*7*	*31*
99	2	146	15	8	5	52	37	8	11	16	24	101	19	660	05
33		131	14	8		38	29	3	7	8	13	50	16	346	01
												1		9	50
														4	*25*
		1						2		1		3		8	*21*
2						*3*	*1*	*1*		*1*		*6*		*12*	*51*
2		*2*												7	*22*
1		*1*				*1*			*1*		*2*			*4*	*23*
														3	54
3						1						1	1	11	*30*
												2		5	52
												6		16	55
										1	1			11	56
6	1	1						1			2			13	57
1	*1*													*5*	*24*
6		3										3		14	58
						1	1				1	1		9	59
										2	*1*	*1*		*9*	*25*
3												2		4	60
11		1					1							9	61
3		*1*				*2*	*1*					*6*		*21*	*26*
4					1				1			1		18	62
1		5	1									4		7	63
						1		1	1					13	64
						1			1			1		7	65
5							1			1	1	3		25	66
3														3	67
13						*3*	*1*			*1*		*2*		*13*	*27*
							1					3		16	68
1										*1*	*1*	*1*		4	*28*
					1						1			5	69
1											1	1	1	10	70
					1	1						1		10	71
					2						1		1	7	72
							1					2		2	10

in bracketed line.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
06	CHAUTAUQUA COUNTY	2,536	97	1,463	179	68	746	31	4	1,615	4	268	5
01	**Dunkirk, city**	504	19	222	42	13	71	6	2	17	...	74	3
02	**Jamestown, city**	866	40	480	62	22	214	11	1	1,057	2	108	...
50	Arkwright	22	...	11	4	...	7	...	...	...	...	5	...
51	Busti	15	2	13	1	...	9	...	...	6	...	4	...
20	*Lakewood, village*	*9*	...	*9*	*1*	...	*6*	...	...	*34*	...	*2*	...
52	Carroll	44	...	19	1	2	13	...	...	8	...	1	...
53	Charlotte	17	...	7	...	...	6	...	...	11	...	2	...
21	*Sinclairville, village (62)*	*9*	*1*	*9*	...	*1*	*7*	...	...	...	...	*1*	...
54	Chautauqua	41	2	47	2	...	36	1	...	...	...	1	...
22	*Mayville, village*	*21*	*2*	*13*	...	*1*	*10*	...	...	*1*	...	...	...
34	*Chautauqua, village*	*2*	...	*12*	...	...	*8*	*2*	*1*	*1*	...	*1*	...
55	Cherry Creek	16	...	4	...	...	4	2	...	4	...	...	...
23	*Cherry Creek, village*	*10*	...	*8*	*1*	...	*5*	*1*	...	*1*	...	*11*	...
56	Clymer	26	2	18	2	1	12	...	...	...	...	...	...
57	Dunkirk	13	...	9	...	1	3	...	...	...	...	...	...
58	Ellery	24	...	15	...	...	8	...	...	50	...	...	...
33	*Bemus Point, village*	*5*	...	*5*	...	...	*3*	...	...	...	...	...	...
59	Ellicott	23	1	17	2	...	12	...	...	2	...	4	1
24	*Celoron, village*	*12*	...	*15*	*2*	...	*9*	...	...	...	...	*1*	...
25	*Falconer, village*	*53*	*3*	*13*	*3*	...	*3*	...	...	*42*	...	*10*	...
60	Ellington	26	1	9	1	...	8	1	...	13	...	...	...
61	French Creek	12	2	5	1	1	2	...	...	...	...	...	...
62	Gerry (21)	18	...	11	...	1	8	...	...	2	...	3	...
63	Hanover	38	2	32	...	1	15	...	...	...	...	1	...
26	*Forestville, village*	*11*	*1*	*5*	...	*1*	*4*	...	...	*1*	...	*1*	...
27	*Silver Creek, village*	*89*	...	*36*	*3*	*2*	*22*	*2*	...	...	...	*2*	...
64	Harmony	24	...	14	1	...	11	1	...	53	...	3	...
28	*Panama, village*	*1*	...	*7*	...	...	*5*	...	...	*46*	...	...	...
65	Kiantone	4	...	2	...	...	1	...	...	...	...	2	...
66	Mina	17	1	11	1	...	7	...	...	...	...	...	...
76	North Harmony	20	1	19	1	1	13	...	...	13	...	3	...
67	Poland	31	1	20	3	3	10	...	...	4	...	2	...
68	Pomfret	43	1	48	5	3	17	...	...	23	...	...	...
29	*Fredonia, village*	*125*	*5*	*81*	*8*	*6*	*54*	...	...	*38*	...	*10*	*1*
69	Portland	53	1	14	2	...	8	...	...	17	...	1	...
30	*Brocton, village*	*31*	...	*26*	*3*	...	*18*	...	...	*10*	...	*1*	...
70	Ripley	55	1	33	3	1	20	1	...	10	...	1	...
71	Sheridan	41	3	17	1	1	9	...	...	2	...	1	...
72	Sherman	25	1	11	4	...	4	...	...	...	...	...	...
31	*Sherman, village*	*10*	...	*16*	*2*	...	*8*	...	...	...	...	...	...
73	Stockton	38	2	24	2	1	17	1	...	83	...	3	...
74	Villenova	12	...	12	...	2	9	1	...	...	...	...	...
75	Westfield	17	1	17	3	...	10	...	...	11	...	...	...
32	*Westfield, village*	*63*	*1*	*47*	*10*	*3*	*20*	*1*	...	*55*	*2*	*9*	...
07	CHEMUNG COUNTY	1,452	52	874	100	37	443	85	6	203	2	127	4
01	**Elmira, city**	1,120	40	621	73	28	304	65	6	162	1	88	3
50	Ashland	1	...	4	1	...	3	...	...	...	...	...	...
20	*Wellsburg, village*	*5*	...	*3*	...	...	*1*	*1*	...	*8*	...	...	...
51	Baldwin	8	...	6	...	...	5	...	...	...	...	...	...
52	Big Flats	36	...	30	3	2	14	...	...	18	1	...	...
53	Catlin	14	1	9	1	1	3	...	...	...	...	4	1
54	Chemung	25	...	13	3	...	5	...	...	11	...	14	...
55	Elmira	23	1	26	3	2	5	2	...	...	...	...	...
21	*Elmira Heights, village (57)*	*82*	*5*	*28*	*6*	*2*	*14*	*1*	...	*3*	...	*3*	...
56	Erin	7	2	9	1	...	5	1	...	...	...	3	...
57	Horseheads (21)	17	...	38	1	...	27	4	...	...	...	...	...
22	*Horseheads, village*	*27*	*1*	*25*	*2*	*1*	*17*	*3*	...	*3*	...	*6*	...
58	Southport	41	...	27	2	...	20	4	...	8	...	5	...
59	Van Etten	13	2	15	2	...	5	...	...	...	...	...	...
23	*Van Etten, village*	*8*	...	*12*	...	*1*	*8*	*1*	...	...	...	*1*	...
60	Veteran	25	...	9	2	...	7	3	...	...	...	3	...
10	Elmira State Reformatory	...	...	1	...	...	...	...	...	...	...	...	...

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —															
						TUBERCULOSIS				PNEUMONIA					
Whooping cough, 9		Diphtheria, 10		Influenza, 11		Pulmonary and acute miliary, 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101	Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	District number
334	3	342	20	48	12	160	71	41	11	36	45	108	34	1,110	06
20	....	47	8	19	2	33	8	6	4	10	9	14	7	155	01
167	2	209	7	20	2	58	30	28	4	6	16	40	8	362	02
1	....	2	....	1	....	1	....	....	....	....	....	....	1	10	50
....	....	10	....	....	....	....	....	....	....	....	1	....	....	12	51
....	....	*2*	*1*	....	....	*2*	....	....	....	....	....	*1*	....	*7*	*20*
1	....	2	....	....	....	3	1	....	....	1	2	2	....	18	52
....	....	....	....	....	....	....	....	....	....	....	....	....	....	7	53
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*9*	*21*
....	....	....	....	....	....	....	1	....	....	....	1	5	....	40	54
....	....	....	....	....	....	*1*	....	....	....	....	*1*	*1*	....	*11*	*22*
....	....	....	....	....	....	....	....	....	....	....	....	*2*	....	*9*	*34*
2	....	....	....	....	....	....	....	....	....	....	....	1	....	3	55
....	....	....	....	*1*	....	*2*	....	....	....	*1*	....	*1*	*1*	*5*	*23*
....	....	8	1	....	2	1	....	1	....	1	....	2	....	12	56
....	....	....	1	....	....	....	1	....	....	....	1	....	....	6	57
....	....	....	....	....	....	....	1	....	....	....	....	3	....	11	58
....	....	....	....	....	....	*1*	....	....	....	....	....	....	....	*5*	*33*
....	....	....	....	....	....	2	....	....	....	....	....	....	....	16	59
....	....	*1*	....	....	*1*	....	....	....	....	....	....	....	*1*	*13*	*24*
....	....	*5*	....	....	....	*3*	....	....	....	*1*	*2*	*2*	....	*8*	*25*
....	....	....	....	....	....	3	....	....	....	....	1	....	....	8	60
....	....	4	....	....	1	....	....	....	....	....	....	....	1	3	61
....	....	....	....	....	1	....	....	....	....	1	....	....	1	8	62
24	....	2	....	1	....	1	....	1	....	....	2	4	....	26	63
31	*1*	*2*	....	*1*	....	*5*	....	....	....	*1*	....	....	....	*3*	*26*
10	....	*1*	....	....	....	*2*	*1*	....	....	....	*2*	*2*	*1*	*30*	*27*
....	....	....	....	....	....	4	....	....	....	....	....	2	....	12	64
3	....	....	....	....	....	*3*	*1*	....	....	....	....	....	....	*6*	*28*
....	....	....	....	....	....	1	....	....	....	....	....	....	....	2	65
....	....	....	....	....	....	....	....	....	....	1	....	....	....	10	66
....	....	....	....	....	....	1	....	....	....	....	....	2	....	17	76
....	....	1	....	....	....	1	....	....	....	1	....	2	1	16	67
9	....	3	....	....	1	....	17	....	....	....	....	....	2	28	68
22	....	*22*	....	....	....	*8*	*3*	*1*	....	*4*	*4*	*7*	*2*	*60*	*29*
....	....	....	....	....	....	1	....	....	....	1	....	....	1	12	69
2	....	*12*	*1*	....	....	*2*	....	*1*	*1*	*1*	....	....	....	*23*	*30*
....	....	....	....	....	....	2	1	....	....	1	1	2	....	28	70
3	....	6	1	....	....	3	....	....	....	1	1	....	1	18	71
....	....	....	....	....	....	....	....	....	....	....	....	....	1	10	72
2	....	....	....	....	....	*1*	....	....	*1*	....	....	*2*	....	*13*	*31*
29	....	....	....	....	....	9	1	2	1	1	1	3	1	16	73
6	....	....	....	4	....	3	1	....	....	1	....	2	....	8	74
....	....	....	....	1	1	1	....	....	....	....	....	1	....	15	75
2	....	*3*	....	....	*1*	*2*	*4*	*1*	....	*2*	....	*5*	*4*	*29*	*32*
276	3	68	6	3	5	105	38	5	7	20	35	77	19	652	07
211	2	58	4	2	4	77	16	3	6	11	29	51	14	474	01
....	....	1	....	....	....	....	....	....	....	1	....	....	....	3	50
6	....	....	....	....	....	*3*	....	*1*	....	*1*	*1*	*1*	....	....	*20*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	51
2	1	1	....	....	....	1	....	....	....	1	....	3	1	23	52
12	....	....	....	....	....	....	1	....	....	....	....	1	....	6	53
....	....	....	....	....	....	4	1	....	....	....	1	1	....	10	54
..	....	2	2	....	....	2	12	1	1	....	2	2	1	6	55
25	....	*1*	....	....	....	*13*	*3*	....	....	*1*	*2*	*5*	*2*	*15*	*21*
7	....	1	....	1	1	....	....	....	....	....	....	....	....	8	56
....	....	1	....	....	....	3	1	....	....	....	....	3	....	34	57
7	....	*1*	....	....	....	....	....	....	....	....	....	*1*	....	*22*	*22*
6	....	1	....	....	....	1	2	....	....	....	....	3	....	22	58
....	....	....	....	....	....	1	....	....	....	2	....	2	....	11	59
....	....	....	....	....	....	....	*1*	....	....	*1*	....	*3*	*1*	*6*	*23*
....	....	1	....	....	....	....	....	....	....	2	....	1	....	6	60
....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	10

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1–4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
08	CHENANGO COUNTY	650	38	587	43	12	383	9	2	58	....	52	3
01	**Norwich, city**	184	13	152	14	4	77	....	....	1	....	2	....
50	Afton	25	1	14	....	....	10	....	....	6	....	10	....
20	*Afton, village*	*8*	......	*20*	*1*	*1*	*14*	....	....	*3*	....	*5*	*1*
51	Bainbridge	5	......	9	....	....	7	3	....	2	....	....	....
21	*Bainbridge, village*	*29*	*1*	*22*	....	*1*	*15*	*1*	*1*	*7*	....	*6*	....
52	Columbus	16	......	9	1	....	7	....	....	3	....	....	....
53	Coventry	13	......	8	2	....	4	....	....	....	....	1	1
54	German	2	2	7	1	....	4	....	....	....	....	....	....
55	Greene	31	1	21	1	....	17	....	....	9	....	3	....
22	*Greene, village*	*21*	......	*25*	*3*	....	*17*	....	....	*1*	....	*4*	....
56	Guilford	22	1	24	1	1	14	....	....	5	....	3	....
57	Lincklaen	9	1	9	....	1	4	1	1	3	....	1	....
58	McDonough	20	......	13	2	....	9	....	....	....	....	....	....
59	New Berlin	14	1	26	1	....	18	....	....	....	....	....	....
23	*New Berlin, village*	*17*	*1*	*13*	*2*	....	*9*	....	....	*2*	....	*2*	....
60	North Norwich	12	......	11	1	....	8	....	....	....	....	1	....
61	Norwich	16	6	11	....	....	9	....	....	....	....	1	....
62	Otselic	12	......	18	2	....	10	....	....	....	....	....	....
63	Oxford	19	2	11	1	....	10	....	....	....	....	1	....
25	*Oxford, village*	*19*	*4*	*24*	*1*	*1*	*19*	*1*	....	....	....	*5*	....
64	Pharsalia	13	......	8	....	....	5	....	....	....	....	....	....
65	Pitcher	16	......	13	3	1	7	....	....	....	....	3	1
66	Plymouth	25	1	12	2	....	7	....	....	....	....	1	....
67	Preston	14	......	12	....	....	11	....	....	....	....	....	....
68	Sherburne	37	1	23	2	2	9	....	....	4	....	....	....
26	*Earlville, village (pt.)*	......	*1*	*3*	*1*	....	*2*	*1*	....	*8*	....	*1*	....
[*26**	*Earlville, village (2656)*]	*13*	*1*	*13*	*2*	....	*9*	*2*	*1*	*10*	....	*1*	....
27	*Sherburne, village*	*13*	......	*15*	....	....	*11*	....	....	*3*	....	*2*	....
69	Smithville	21	1	10	1	....	8	....	....	1	....	....	....
70	Smyrna	14	......	7	....	....	5	1	....	....	....	....	....
28	*Smyrna, village*	*3*	......	*3*	....	....	*2*	*1*	....	....	....	....	....
10	Woman's Relief Corps Home, Oxford	......	......	34	....	....	34	....	....	....	....	....	....
09	CLINTON COUNTY	1,187	51	639	131	34	285	18	2	270	....	169	7
01	**Plattsburg, city**	311	17	194	33	7	79	5	1	27	....	13	1
50	Altona	55	1	22	7	2	6	....	....	5	....	20	2
51	Ausable	19	......	12	3	....	5	....	....	....	....	....	....
20	*Keeseville, village (pt.)*	*28*	......	*7*	*1*	....	*5*	....	....	*2*	....	....	....
[*20*†	*Keeseville, village (1550)*]	*39*	......	*15*	*3*	....	*9*	....	....	*2*	....	....	....
52	Beekmantown	36	3	28	5	1	16	1	....	31	....	10	1
53	Black Brook	44	......	25	7	3	7	....	....	3	....	1	....
54	Champlain	49	3	27	9	2	10	....	....	3	....	21	2
21	*Champlain, village*	*34*	*2*	*17*	*3*	*2*	*7*	*1*	....	*9*	....	*1*	....
22	*Rouses Point, village*	*47*	*2*	*21*	*5*	*1*	*13*	....	....	....	....	*10*	....
55	Chazy	87	6	43	5	4	22	....	....	90	....	48	1
56	Clinton	35	1	17	4	1	9	6	....	....	....	....	....
57	Dannemora	66	......	23	9	1	4	3	..	1	....	9	....
23	*Dannemora, village (62)*	*22*	*1*	*12*	*3*	*1*	*3*	....	....	*16*	....	....	....
58	Ellenburgh	94	3	34	11	4	15	1	....	....	....	13	....
59	Mooers	51	2	38	9	2	20	....	....	22	....	....	....
24	*Mooers, village*	*4*	......	*6*	....	....	*4*	....	....	*2*	....	*1*	....
60	Peru	39	1	24	3	1	18	....	....	45	....	7	....
61	Plattsburg	52	2	22	7	1	11	....	....	9	....	4	....
62	Saranac (23)	80	7	21	3	....	16	1	1	2	....	8	....
63	Schuyler Falls	34	......	21	4	1	11	....	....	3	....	3	....
10	Dannemora State Hospital	......	......	15	....	....	4	....	....	....	....	....	....
11	Clinton Prison	......	......	10	....	....	....	....	....	....	....	....	....

* Earlville, village, located two counties, Chenango and Madison. Total for entire village given in bracketed line.

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —															
						TUBERCULOSIS				PNEUMONIA					
Whooping cough, 9		Diphtheria, 10		Influenza, 11		Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101	Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
74	2	16	4	42	3	13	17	3	5	9	25	48	9	460	08
1	1	3	2		1		1		2	1	6	19	3	116	01
														14	50
										1		*3*	*1*	*14*	*20*
1						1	1							8	51
						2	*2*			*1*	*1*	*2*		*15*	*21*
15						1						1		8	52
					1						1			5	35
		1									1	1		5	54
					1	1				1	3	1		15	55
		1						*1*	*2*			*1*		*22*	*22*
6		1		41		1		1				3		21	56
13						1					1		1	6	57
						1					1	1		11	58
				1					1		4	1		20	59
8														*13*	*23*
2		3	1				1				1			8	60
		1					1					3		7	61
						1	1						1	16	62
						1							1	70	63
2								*1*				*1*	*1*	*22*	*25*
4											2			6	64
11		1	1			1								11	65
							1							11	66
												1		11	67
3	1	5				1	7				2	2	1	10	68
2														*3*	*26*
15												*2*		*10*	*26]
												3		*12*	*27*
										1	*1*	1		7	69
4						1	1				1	1		4	70
2														*3*	*28*
							1			4		3		26	10
87	1	54	7	1	6	34	38	5	8	22	31	35	27	455	09
44		5	3		1	18	7	3	4	3	9	12	1	152	01
		1					1			1				18	50
							2					2	1	7	51
							1				*1*	*1*		*4*	*20*
						1	*2*				*1*	*2*		10	*20]
31							1		1	1	4	2	2	16	52
		3					1			1		1	1	21	53
		1			1	2			1		2	2	3	16	54
5	*1*	*6*				*2*		*1*		*2*	*1*	*1*		*12*	*21*
		1					*1*			*2*		*1*		*17*	*22*
6						2	7			2	2	1	2	28	55
		6	1							1	1	1	1	12	56
		7				2					1		3	19	57
							1			*1*		*3*	*1*	*6*	*23*
		11	3		2	1	1			2	1	1	6	18	58
		1			2	1				4	5	4	1	22	59
						1								*6*	*24*
						1					2	2	2	18	60
		2		1		1				1			1	20	61
1		9						1				1	2	17	62
		1				1	1		1	1	1			17	63
						2	8							7	10
							6		1		1			2	11

† Keeseville, village, located in two counties, Clinton and Essex. Total for entire village given in bracketed line.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	DEATHS AT AGE OF — 1-4 years	DEATHS AT AGE OF — 60 years and over	CASES AND — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles, 7 — Cases	Measles, 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
10	COLUMBIA COUNTY	700	27	556	42	11	347	7	....	82	....	78	1
01	Hudson, city	327	12	189	20	7	94	....	....	53	....	25	....
50	Ancram	19	....	16	4	1	8	....	....	....	....	2	....
51	Austerlitz	7	....	10	....	....	9	....	....	....	....	....	....
52	Canaan	12	2	14	....	....	9	....	....	....	....	1	....
53	Chatham	24	2	28	....	....	27	....	....	....	....	....	....
20	*Chatham, village (59)*	*34*	....	*25*	*1*	....	*17*	....	....	*5*	....	*8*	....
54	Claverack	20	....	29	3	....	18	2	....	....	....	....	....
21	*Philmont, village*	*25*	*2*	*27*	*1*	....	*21*	*1*	....	....	....	*1*	*1*
55	Clermont	5	....	6	....	....	3	....	....	1	....	....	....
56	Copake	16	2	15	2	....	11	....	....	....	....	15	....
57	Gallatin	6	....	10	1	1	6	....	....	1	....	....	....
58	Germantown	14	2	15	....	....	7	....	....	....	....	....	....
59	Ghent (20)	6	....	24	....	....	22	3	....	5	....	....	....
60	Greenport	22	....	12	3	....	3	....	....	1	....	2	....
61	Hillsdale	12	1	21	....	....	16	1	....	....	....	10	....
62	Kinderhook	17	....	14	....	....	9	....	....	1	....	3	....
22	*Kinderhook, village*	*9*	....	*8*	*1*	....	*5*	....	....	....	....	....	....
23	*Valatie, village*	*26*	*1*	*14*	....	*1*	*10*	....	....	*1*	....	*1*	....
63	Livingston	18	1	20	2	....	15	....	....	1	....	1	....
64	New Lebanon	10	....	10	1	....	6	....	....	11	....	7	....
65	Stockport	23	....	21	1	1	14	....	....	4	....	....	....
66	Stuyvesant	31	1	20	1	....	15	....	....	....	....	1	....
67	Taghkanic	11	....	6	1	....	4	....	....	....	....	1	....
10	New York State Training School for Girls, Hudson	6	1	2	....	....	....	....	....	....	....	....	....
11	CORTLAND COUNTY	642	27	406	32	5	258	17	3	51	....	150	....
01	Cortland, city	334	15	202	22	3	109	5	2	24	....	37	....
50	Cincinnatus	24	2	16	2	....	10	....	....	1	....	14	....
51	Cortlandville	33	....	32	2	....	21	1	....	2	....	11	....
20	*Homer, village (55)*	*48*	*1*	*50*	*1*	....	*44*	*1*	*1*	*3*	....	*11*	....
21	*McGrawville, village*	*10*	....	*11*	*2*	....	*8*	*5*	....	*1*	....	*2*	....
52	Cuyler	19	....	8	....	1	6	....	....	5	....	2	....
53	Freetown	11	....	4	....	....	4	....	....	....	....	1	....
54	Harford	8	1	6	....	....	3	....	....	1	....	....	....
55	Homer (20)	28	2	10	1	....	7	....	....	....	....	7	....
56	Lapeer	5	....	3	....	....	2	1	....	....	....	....	....
57	Marathon	12	1	3	....	....	1	....	....	....	....	8	....
22	*Marathon, village*	*17*	....	*15*	....	....	*10*	....	....	....	....	*10*	....
58	Preble	14	1	7	2	....	5	1	....	....	....	4	....
59	Scott	4	....	4	....	....	3	1	....	....	....	19	....
60	Solon	19	....	2	....	....	2	....	....	3	....	4	....
61	Taylor	10	2	7	....	1	3	2	....	2	....	1	....
62	Truxton	22	1	8	....	....	6	....	....	....	....	14	....
63	Virgil	16	1	11	....	....	10	....	....	1	....	5	....
64	Willett	8	....	7	....	....	5	....	....	8	....	....	....
12	DELAWARE COUNTY	909	27	622	61	21	35[illegible]	33	1	66	6	34	....
50	Andes	36	1	20	5	2	7	....	....	20	....	....	....
20	*Andes, village*	*2*	....	*9*	....	....	*6*	....	....	*3*	....	....	....
51	Bovina	17	....	8	2	....	4	....	....	25	1	....	....
52	Colchester	54	5	45	5	5	24	16	1	30	2	1	....
31	*Downsville, village*	*8*	....	[illegible]	....	*1*	*1*	....	....	....	....	....	....
53	Davenport	30	2	22	1	2	14	....	....	2	....	....	....
54	Delhi	15	1	26	....	....	19	....	....	44	1	1	....
21	*Delhi, village*	*31*	....	*37*	*3*	*1*	*23*	....	....	*75*	....	*1*	....
55	Deposit	12	....	10	....	....	6	....	....	35	....	1	....
22	*Deposit, village* (0361)*	*26*	*1*	*13*	*3*	....	*8*	....	....	*32*	....	....	....
56	Franklin	38	2	24	2	....	14	2	....	14	....	....	....
23	*Franklin, village*	*9*	....	*15*	*1*	....	*9*	....	....	*5*	....	....	....

*See Deposit, Broome

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
84		58	2	25	7	65	27	9	6	15	12	47	7	432	10
1		33	1	4	2	21	7	4	4	7	5	13	4	146	01
13				19		1	1			2	2			11	50
		1			1									9	51
												3		11	52
												3		25	53
					1	*5*	*1*			*1*		*2*		*20*	*20*
2		1				5	8	1		1		4		16	54
2		*3*				*1*	*1*	*1*		*1*	*1*	*3*		*20*	*21*
							1					1		4	55
						5				1				14	56
1		1				4	3							7	57
16		2		1		5		1	1	1		2		11	58
1		2									1	6		17	59
6		3				1					1		2	9	60
2		1				3	1	1				2		18	61
13						1	1					1		12	62
16		*7*	*1*			*1*						*1*		*6*	*22*
3		*1*			*1*	*2*		*1*	*1*			*2*		*10*	*23*
		2				1						1		19	63
		1			1		1				1			7	64
1					1	3				1	1	1		17	65
7												2	1	17	66
				1		6	1							5	67
							1							1	10
71	2	58	4	38	4	23	8	6	3	9	15	47	3	306	11
34	1	45	3		1	12	4	6	2	7	9	22	2	149	01
12				26		1	1				2			13	50
2									1			2		29	51
		2			*2*		*2*					*8*		*37*	*20*
		1				*2*					*1*	*3*		*7*	*21*
		2	1			1						2		5	52
														4	53
		1		8						1				5	54
												2		8	55
4		1										2		1	56
		1			1	2								2	57
		1					*1*					*2*		*12*	*22*
3												1	1	5	58
												1		3	59
1														2	60
6	1	4				1								6	61
1						2				1	1			6	62
2						2					1			10	63
6				4							1	2		4	64
121	1	29	4	77	12	35	28	3	8	15	18	57	7	465	12
11		3	1								2	3		14	50
					1	*1*	*1*		*1*		*1*			*5*	*20*
						2				1				6	51
15	1			3	4	1	2			1		3		31	52
									1					*33*	*21*
										1	1			20	53
		1		2		1	2					4		19	54
		1				*1*	*2*					*5*	*2*	*28*	*21*
30					1			1	1					8	55
27				*2*		*1*					*2*	*1*	*1*	*9*	**22*
		1	1								2	3		18	56
									1	*1*		*2*		*11*	23

county, for complete total.

Table 39 — STATE OF NEW YORK (exclusive of New York City): ***Births, stillbirths, certain important***

District number	AREA	All births (exclusive of stillbirths)	Still-births	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF —			CASES AND					
					Under 1 year	1-4 years	60 years and over	Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
								Cases	Deaths	Cases	Deaths	Cases	Deaths
	DELAWARE CO. — (*Concluded*)												
57	Hamden	31	2	17	1	....	9	....	....	94	....	4	....
58	Hancock	78	2	30	4	1	17	....	....	47	....	1	....
24	*Hancock, village*	*15*	*1*	*27*	*2*	*1*	*18*	....	....	*29*	....	*6*	....
59	Harpersfield	18	....	11	1	1	4	....	....	15	....	....	....
25	*Stamford, village* (66)	*18*	....	*15*	*2*	....	*10*	....	....	....	....	....	....
60	Kortright	31	....	14	1	....	10	4	....	5	....	....	....
61	Masonville	26	....	9	2	....	3	....	....	6	....	....	....
62	Meredith	23	....	19	2	....	13	1	....	19	....	1	....
63	Middletown	52	....	27	3	....	15	....	....	54	1	....	....
30	*Fleischmanns, village*	*10*	....	*3*	....	....	*3*	....	....	*8*	....	....	....
26	*Margaretville, village*	*16*	....	*8*	*1*	....	*4*	....	....	*57*	*1*	....	....
64	Roxbury	49	1	31	3	2	15	1	....	19	....	....	....
65	Sidney	22	1	11	....	....	9	....	....	....	....	....	....
27	*Sidney, village*	*38*	*1*	*43*	*7*	....	*25*	....	....	*4*	....	*1*	....
66	Stamford (25)	24	....	15	2	....	8	5	....	7	....	....	....
28	*Hobart, village*	*10*	*1*	*7*	....	....	*6*	....	....	*1*	....	....	....
67	Tompkins	43	1	22	4	1	10	....	....	....	....	3	....
68	Walton	39	5	14	....	1	6	1	....	7	....	4	....
29	*Walton, village*	*87*	....	*66*	*4*	*3*	*37*	*3*	....	*1*	....	*10*	....
13	DUTCHESS COUNTY	1,677	63	1,527	127	32	806	71	5	57	1	130	3
01	**Beacon, city**	199	13	138	15	2	68	41	1	6	1	3	1
02	**Poughkeepsie, city**	736	27	426	51	15	222	7	3	13	....	55	....
50	Amenia	32	1	17	2	1	8	....	....	....	....	4	....
51	Beekman	14	....	10	3	1	6	....	....	....	....	1	....
52	Clinton	12	1	13	....	....	10	....	....	2	....	....	....
53	Dover	37	....	10	2	....	6	....	....	....	....	5	....
54	East Fishkill	35	1	25	8	....	12	....	....	1	....	4	....
55	Fishkill	34	1	19	3	1	8	5	....	6	....	1	....
20	*Fishkill, village*	*6*	....	*7*	....	....	*4*	*1*	....	*2*	....	....	....
56	Hyde Park	32	....	23	....	1	17	....	....	....	....	1	....
57	LaGrange	13	....	9	1	....	7	....	....	1	....	....	....
58	Milan	10	....	8	....	....	4	....	....	....	....	2	....
59	Northeast	15	....	19	1	....	11	....	....	1	....	....	....
21	*Millerton, village*	*8*	*1*	*10*	*1*	....	*9*	....	....	....	....	....	....
60	Pawling	21	....	11	3	....	6	....	....	....	....	1	....
22	*Pawling, village*	*17*	....	*22*	*5*	....	*12*	....	....	*1*	....	*2*	....
61	Pine Plains	25	....	15	2	....	12	9	....	7	....	....	....
62	Pleasant Valley	9	1	6	....	....	5	....	....	....	....	....	....
23	*Pleasant Valley, village*	*2*	....	*4*	....	....	*2*	....	....	....	....	....	....
63	Poughkeepsie	176	7	165	15	4	60	1	1	....	....	9	1
24	*Wappingers Falls, village* (68)	*75*	*2*	*40*	*6*	*2*	*18*	*2*	....	*1*	....	*1*	....
64	Red Hook	15	1	17	2	....	13	....	....	....	....	....	....
25	*Red Hook, village*	*11*	....	*22*	*1*	....	*19*	*1*	....	....	....	*1*	....
26	*Tivoli, village*	*9*	*1*	*13*	....	....	*9*	....	....	*1*	....	....	....
65	Rhinebeck	15	3	17	....	....	10	....	....	4	....	9	....
27	*Rhinebeck, village*	*21*	*1*	*28*	*1*	*2*	*20*	....	....	*9*	....	*20*	*1*
66	Stamford	20	....	25	....	2	19	3	....	....	....	6	....
67	Union Vale	16	....	7	2	....	2	....	....	....	....	....	....
68	Wappinger (24)	23	....	17	3	....	8	....	....	....	....	....	....
69	Washington	20	1	35	....	....	30	....	....	2	....	3	....
28	*Millbrook, village*	*19*	*1*	*10*	....	*1*	*7*	....	....	....	....	*2*	....
10	Matteawan State Hospital	....	....	34	....	....	7	....	....	....	....	....	....
11	Hudson River State Hospital	....	....	*305*	....	....	*155*	*1*	....	....	....	....	....
14	ERIE COUNTY	16,500	628	8,140	1,677	535	2,607	235	31	2,874	36	1625	64
01	**Buffalo, city**	13,227	526	6,362	1,241	453	1,932	106	22	1,601	27	1254	59
02	**Lackawanna, city**	654	12	156	76	18	9	43	....	86	....	75	....
03	**Tonawanda, city**	244	6	76	9	4	33	22	1	100	....	19	....
50	Alden	28	3	21	2	2	13	....	....	....	....	5	....
20	*Alden, village*	*4*	....	*9*	*1*	....	*5*	*1*	....	*1*	....	*1*	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921 — (Continued)**

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	....	....	69	1	3	3	....	....	....	....	2	....	11	57
....	....	7	....	....	2	1	3	....	....	1	....	3	1	20	58
....	....	*2*	....	....	*1*	*2*	*2*	....	*1*	....	*3*	*3*	*1*	*16*	*24*
11	....	....	....	....	....	1	2	1	1	....	....	1	....	7	59
....	....	....	....	....	....	*4*	*3*	....	....	*1*	*1*	*1*	....	*9*	*25*
....	....	....	....	....	....	....	....	....	....	1	....	....	....	13	60
3	....	....	....	....	....	....	....	....	....	2	....	1	....	6	61
....	....	....	....	....	....	....	1	....	....	....	....	2	....	16	62
....	....	2	1	....	....	2	....	....	....	2	3	1	....	19	63
1	....	....	....	....	....	*1*	....	....	....	....	....	*1*	....	*2*	*30*
4	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*6*	*26*
1	....	2	1	....	....	3	1	....	....	1	....	3	....	25	64
....	....	....	....	....	....	....	....	....	....	1	....	3	....	7	65
4	....	*1*	....	....	*1*	*3*	*2*	....	*2*	....	....	*5*	....	*33*	*27*
6	....	1	....	....	....	2	....	....	....	....	1	....	1	13	66
....	....	....	....	....	....	*1*	....	....	....	....	....	....	....	*7*	*28*
1	....	....	....	....	....	....	1	....	....	....	....	1	1	19	67
2	....	2	....	1	....	....	....	....	....	....	1	....	....	13	68
5	....	*6*	....	....	*1*	*5*	*3*	*1*	....	*2*	*1*	*8*	....	*51*	29
266	6	126	9	14	5	148	135	12	17	63	62	134	13	1,074	13
14	1	13	....	1	....	16	8	....	1	3	10	20	1	91	01
52	....	56	7	2	1	69	15	6	6	11	14	43	9	317	02
3	....	16	....	2	1	4	2	1	....	....	....	2	....	12	50
4	....	....	....	....	....	2	....	....	....	....	....	2	....	8	51
....	....	....	....	....	....	....	1	....	....	....	2	1	....	9	52
22	....	7	....	....	....	2	....	....	....	....	....	1	....	9	53
6	....	1	....	....	....	3	2	1	1	1	3	2	....	16	54
26	....	....	....	....	....	5	2	1	....	2	....	1	1	13	55
21	....	....	....	....	....	*4*	*1*	....	....	....	*1*	*1*	....	*4*	*20*
4	....	9	....	2	....	1	1	....	1	....	....	4	....	17	56
19	....	....	....	....	....	1	....	....	....	....	1	....	....	8	57
....	....	....	....	....	....	....	....	....	....	....	1	2	....	5	58
5	1	2	....	....	1	....	....	....	....	1	4	....	....	12	59
4	....	....	....	*1*	....	*2*	....	....	....	....	*2*	*1*	....	*7*	*21*
....	....	1	....	....	....	2	2	....	....	....	....	2	....	7	60
10	....	....	....	....	*1*	....	....	....	....	*2*	*1*	*2*	....	*16*	*22*
7	....	3	....	....	....	3	....	....	....	1	2	1	....	11	61
....	....	....	....	....	....	....	....	....	....	1	....	....	....	5	62
....	....	....	....	....	....	....	*1*	....	....	....	....	*1*	....	*2*	*23*
27	2	5	1	....	....	4	25	1	2	3	7	14	....	109	63
2	....	*1*	....	....	....	*4*	*3*	*1*	....	....	*1*	*7*	*2*	*27*	*24*
17	1	....	....	1	1	21	1	....	....	....	....	2	....	12	64
....	....	....	....	*2*	....	*1*	*2*	*1*	....	*1*	*2*	*2*	....	*15*	*25*
....	....	....	....	....	....	*2*	*1*	....	....	....	....	*1*	....	*11*	*26*
....	....	2	....	....	....	....	....	....	1	1	....	1	....	14	65
....	....	*1*	....	....	....	....	....	....	....	....	*1*	*3*	....	*23*	*27*
5	....	1	1	....	....	....	2	....	....	1	1	1	....	19	66
4	....	2	....	....	....	....	....	....	....	....	....	1	....	6	67
4	1	6	....	....	....	....	....	....	1	1	....	2	....	12	68
10	....	....	....	....	....	1	....	....	....	....	....	6	....	29	69
....	....	....	....	*1*	....	*1*	....	....	....	*4*	*2*	*2*	....	*2*	*28*
....	....	....	....	....	....	....	7	....	2	2	2	1	....	20	10
....	....	....	....	2	....	....	59	....	2	28	5	5	....	206	11
3028	108	2,576	171	60	15	942	574	144	80	259	246	643	509	5,404	14
2235	80	2,155	148	42	6	784	487	118	67	186	184	530	395	4,171	01
306	10	66	....	1	1	56	5	14	2	15	3	6	18	96	02
22	....	28	1	....	....	17	7	1	1	3	4	8	2	49	03
16	....	2	1	....	....	1	1	....	....	....	2	3	....	14	50
3	....	*3*	....	....	....	*1*	*1*	....	....	....	*1*	....	....	*7*	*20*

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of still-births)	Still-births	All deaths (exclusive of still-births)	DEATHS AT AGE OF —			CASES AND					
					Under 1 year	1-4 years	60 years and over	Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
								Cases	Deaths	Cases	Deaths	Cases	Deaths
	ERIE COUNTY — (*Concluded*)												
51	Amherst	90	3	49	5	2	34	3	....	7	....	27	1
21	*Williamsville, village*	18	1	15	1	1	6	2	....	2	....	1	....
52	Aurora	25	.....	22	2	1	11	....	....	34	....	3	....
22	*East Aurora, village*	54	.....	44	4	1	38	5	....	22	....	1	....
53	Boston	27	.....	18	3	.....	10	....	....	15	....	3	....
54	Brant	47	2	26	3	.....	13	3	1	.....	....	....	....
23	*Farnham, village*	22	3	4	.....	.....	2	....	....	2	....	....	....
55	Cheektowaga	290	9	105	40	10	19	2	....	41	3	31	1
24	*Depew, village (67)*	201	3	49	18	4	10	1	....	3	....	8	....
25	*Sloan, village*	53	1	16	6	3	1	....	....	.....	....	....	....
56	Clarence	61	1	37	3	.....	19	12	1	32	1	16	....
57	Colden	20	.....	13	2	1	7	2	....	64	....	....	....
58	Collins	40	5	29	6	2	14	2	....	154	....	14	....
26	*Gowanda, village* (0476) (pt.)*	.....	.....	.....	.....	.....	.....	....	....	36	....	....	....
59	Concord	38	1	22	1	1	12	....	....	16	....	4	....
27	*Springville, village*	31	2	30	2	.....	25	....	....	24	....	4	....
60	East Hamburg	71	2	29	6	2	13	....	....	120	....	6	....
61	Eden	47	1	29	1	.....	18	2	....	32	....	5	....
62	Elma	31	3	28	4	.....	12	....	....	16	....	....	....
63	Evans	45	2	27	2	.....	12	....	....	3	....	....	....
28	*Angola, village*	37	2	21	3	5	7	3	....	.....	....	9	....
64	Grand Island	20	.....	5	.....	.....	.....	....	....	25	....	....	....
65	Hamburg	82	9	49	5	3	19	7	1	105	....	29	....
29	*Blasdell, village*	39	.....	16	7	2	1	....	....	12	....	4	....
30	*Hamburg, village*	55	2	40	4	.....	22	2	....	56	....	21	....
66	Holland	16	1	15	5	1	6	....	....	54	....	....	....
67	Lancaster (24)	48	1	23	6	.....	11	2	....	23	....	14	....
31	*Lancaster, village*	111	1	56	13	3	26	2	....	114	....	24	2
68	Marilla	34	1	16	2	.....	9	....	....	3	1	....	....
69	Newstead	51	3	19	2	1	8	....	....	5	1	9	....
32	*Akron, village*	31	1	23	2	2	15	5	....	2	....	3	....
70	North Collins	25	1	17	3	1	5	1	....	1	....	21	1
34	*North Collins, village*	34	.....	16	3	.....	12	....	1	.....	....	....	....
71	Sardinia	36	.....	13	1	.....	6	1	....	6	....	....	....
72	Tonawanda	56	1	21	4	.....	2	2	....	2	....	1	....
33	*Kenmore, village*	37	1	17	3	3	8	....	....	1	....	3	....
73	Wales	25	1	19	4	.....	13	....	....	.....	....	....	....
74	West Seneca	129	4	91	10	3	54	4	....	52	3	8	....
10	Buffalo State Hospital	5	.....	185	2	.....	83	....	....	2	....	2	....
11	Gowanda State Hospital	.....	.....	68	.....	.....	36	....	....	.....	....	....	....
12	Our Lady of Victory Infant Home, Lackawanna	261	13	194	160	6	2	....	4	.....	....	....	....
15	ESSEX COUNTY	797	33	503	68	21	205	4	....	203	3	60	2
50	Chesterfield	19	2	13	1	1	8	....	....	.....	....	1	....
20	*Keeseville, village† (0951) (pt.)*	11	.....	8	2	.....	4	....	....	.....	....	....	....
51	Crown Point	28	.....	18	1	2	13	....	....	16	....	....	....
52	Elizabethtown	16	.....	10	.....	1	2	....	....	1	....	....	....
21	*Elizabethtown, village*	5	.....	9	.....	.....	5	....	....	.....	....	....	....
53	Essex	31	.....	18	3	1	10	1	....	.....	....	2	....
54	Jay	64	1	22	5	1	10	1	....	15	....	....	....
55	Keene	22	3	13	2	.....	4	....	....	.....	....	....	....
56	Lewis	15	.....	9	.....	.....	7	....	....	.....	....	5	....
57	Minerva	13	.....	6	1	.....	2	....	....	1	....	....	....
58	Moriah	132	5	65	17	1	20	....	....	2	1	7	....
22	*Port Henry, village*	53	1	22	3	1	8	....	....	.....	....	....	....
59	Newcomb	5	.....	4	.....	.....	2	....	....	.....	....	....	....
60	North Elba	17	1	5	.....	2	2	....	....	.....	....	1	1
23	*Lake Placid, village*	60	3	22	7	1	6	1	....	34	....	20	....

* See Gowanda, Cattaraugus county for complete total.

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

DEATHS FROM —															
Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary, and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
72	2	5	....	....	1	....	....	....	....	2	1	5	....	37	51
88	1	4	....	....	....	1	....	2	1	....	2	1	....	10	21
2	....	2	1	....	....	....	3	1	....	....	1	2	2	13	52
61	....	6	....	....	....	3	....	....	....	1	1	4	....	38	22
....	....	1	1	....	....	....	....	....	1	2	2	2	1	9	53
13	....	7	....	....	....	2	2	....	1	1	1	2	....	18	54
....	....	1	....	....	....	....	....	....	....	....	....	1	....	3	23
41	3	16	2	....	....	12	6	1	....	3	....	5	18	64	55
1	....	16	3	1	1	4	1	....	....	5	4	3	3	29	24
....	1	8	....	....	....	2	1	1	1	....	....	....	2	11	25
16	....	46	....	6	....	5	5	1	....	1	....	5	1	23	56
8	....	1	....	....	....	....	....	....	....	....	....	1	1	11	57
10	....	11	....	....	....	5	1	....	....	2	3	1	4	18	58
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*26
....	....	1	....	2	....	....	1	....	1	3	1	4	....	12	59
4	....	....	....	1	....	3	....	2	....	....	....	6	....	25	27
30	1	3	....	....	....	2	3	....	1	....	1	1	....	22	60
....	....	5	....	....	....	1	3	....	....	....	1	2	....	23	61
3	....	8	....	....	1	....	....	....	....	1	2	1	1	22	62
4	....	11	3	....	....	5	3	....	....	....	....	4	1	16	63
4	....	84	2	....	1	1	1	1	....	1	1	1	3	11	28
....	....	3	....	....	....	....	....	....	....	....	....	....	....	5	64
3	....	4	....	....	1	2	2	....	....	....	3	6	2	34	65
....	....	....	....	....	....	3	....	....	....	1	....	1	2	12	29
3	....	4	....	1	....	2	2	....	....	1	2	....	2	33	30
....	....	1	....	....	....	2	....	....	....	1	1	....	....	13	66
6	....	3	....	....	....	3	1	....	....	1	1	....	2	18	67
12	2	15	1	3	....	9	1	1	....	2	3	5	1	39	31
1	....	1	....	....	....	1	....	....	....	....	1	2	....	12	68
....	....	3	1	....	....	1	2	....	....	....	....	....	2	14	69
2	1	....	....	....	....	1	....	....	....	....	....	4	....	18	32
....	....	....	....	....	....	....	1	....	2	....	1	2	....	10	70
....	....	....	....	....	1	....	....	....	....	....	....	2	1	11	34
....	....	....	....	1	....	1	2	....	....	....	....	1	....	10	71
1	....	5	....	....	....	6	1	....	....	....	....	1	....	19	72
2	....	7	....	....	1	2	....	....	....	1	....	2	....	13	33
12	....	....	....	....	....	....	....	....	....	....	....	....	....	19	73
33	1	26	1	2	..	8	1	....	....	1	3	6	4	71	74
2	...	11	2	....	....		23	....	....	16	9	7	....	128	10
....	....	1	....	....	....	1	7	....	1	3	1	3	....	53	11
12	6	8	4	....	1	....	....	1	1	6	6	4	42	120	12
15	1	16	....	14	5	203	79	5	3	9	12	34	16	339	15
....	....	....	....	....	....	....	....	....	....	....	....	....	....	13	50
....	....	....	....	....	....	1	1	....	....	....	....	1	....	6	20
1	....	....	....	....	1	....	....	....	....	....	....	1	....	16	51
1	....	....	....	....	....	....	....	....	1	....	....	1	....	8	52
....	....	....	....	....	....	....	....	....	....	1	....	....	....	8	1
....	....	3	....	....	1	....	....	....	....	....	....	2	....	15	53
1	....	4	....	....	1	5	2	....	....	....	....	1	2	16	54
....	....	1	....	....	....	2	2	1	....	....	1	1	....	9	55
....	....	....	....	....	....	....	....	....	....	....	....	2	....	7	56
....	....	....	....	....	....	....	....	....	....	1	1	....	....	4	57
....	....	....	....	....	1	10	5	....	....	1	4	4	6	43	58
3	....	....	....	....	....	3	4	....	....	....	2	....	1	15	22
....	....	....	....	....	....	....	....	....	....	....	1	1	....	2	59
....	....	....	....	....	....	5	....	....	....	....	....	....	1	3	60
1	....	....	....	....	1	28	4	1	....	....	....	....	3	14	23

† See Keeseville, Clinton county, for complete total.

Table 39 — State of New York (exclusive of New York City): *Births, stillbirths certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	Deaths at age of — Under 1 year	Deaths at age of — 1-4 years	Deaths at age of — 60 years and over	Cases and — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles, 7 — Cases	Measles, 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
	Essex Co.— (*Concluded*)												
24	*Saranac Lake, village (pt.)*	*46*	*5*	*72*	*5*	*2*	*7*	....	....	*9*	....	*5*	*1*
[*24*	*Saranac Lake, village (62,1665)*	*103*	*8*	*252*	*7*	*3*	*19*	*2*	....	*61*	*1*	*10*	*1*
61	North Hudson	8	.....	1	....	....	1	....	....	....	....	....	....
62	St. Armand	8	.....	4	1	....	1	....	....	7	....	....	....
25	*Bloomingdale, village*	*6*	.....	*9*	*1*	....	*5*	....	....	*28*	....	....	....
(*26*)	*Saranac Lake, village (60, 1665) (pt.)*	.....	.....	.....	....	....	....	....	....	....	....	....	....
63	Schroon	17	.....	14	3	1	7	....	....	24	....	....	....
64	Ticonderoga	78	4	72	7	5	34	....	....	44	2	7	....
27	*Ticonderoga, village*	*58*	*3*	*30*	*3*	....	*17*	*1*	....	*24*	....	*5*	....
65	Westport	16	.....	13	1	....	10	....	....	....	....	3	....
28	*Westport, village*	*8*	*3*	*5*	....	....	*3*	....	....	....	....	....	....
66	Willsboro	41	1	26	4	2	11	....	....	3	....	2	....
67	Wilmington	20	1	8	1	....	6	....	....	....	....	1	....
10	Raybrook Hospital for Incipient Tuberculosis	.....	.....	5	....	....	....	....	....	....	....	....	....
16	FRANKLIN COUNTY	1,136	58	769	128	37	239	37	6	458	10	43	2
50	Altamont	85	1	48	11	11	7	4	2	1	2	....	....
20	*Tupper Lake, village*	*87*	*2*	*27*	*7*	*5*	*6*	*6*	....	*21*	*3*	*2*	....
51	Bangor	48	1	42	8	1	21	4	....	6	....	....	....
25	*North Bangor, village*	.....	.....	.....	....	....	....	....	....	....	....	....	....
52	Belmont	36	.....	19	5	....	11	2	....	2	....	2	....
53	Bombay	80	8	27	6	1	8	....	....	....	....	....	....
54	Brandon	28	3	8	2	1	2	....	....	....	....	4	....
55	Brighton	20	.....	8	....	1	3	....	....	29	....	....	....
56	Burke	34	1	16	3	3	7	1	....	10	....	3	1
57	Chateaugay	35	2	14	4	1	6	1	....	3	....	2	....
21	*Chateaugay, village*	*29*	*1*	*15*	....	....	*13*	*2*	....	....	....	*1*	....
58	Constable	16	3	8	2	....	5	3	....	....	....	2	....
59	Dickinson	35	2	18	3	....	10	....	....	37	....	7	....
60	Duane	5	.....	2	2	....	....	....	....	....	....	....	....
61	Fort Covington	35	2	11	1	....	6	....	....	....	....	2	....
22	*Fort Covington, village*	*19*	*1*	*10*	*2*	....	*6*	....	....	*1*	....	....	....
62	Franklin	27	2	15	2	1	2	....	....	29	....	....	....
63	Harrietstown	15	.....	9	....	....	5	....	....	4	....	....	....
23	*Saranac Lake, village (1560, 1562) (pt.)*†	*57*	*3*	*180*	*2*	*1*	*12*	*2*	....	*52*	*1*	*5*	....
64	Malone	65	2	57	12	1	25	....	....	....	1	1	....
24	*Malone, village*	*207*	*14*	*154*	*29*	*7*	*54*	*8*	*2*	*154*	*2*	*4*	....
65	Moira	77	2	32	5	....	16	2	1	83	....	5	1
66	Santa Clara	8	.....	7	1	....	2	....	....	....	....	....	....
67	Waverly	59	6	26	8	2	6	2	1	75	1	3	....
68	Westville	29	2	16	5	1	6	....	....	1	....	....	....
17	FULTON COUNTY	843	25	637	58	21	340	10	1	62	1	65	6
01	Gloversville, city	466	12	343	29	14	174	2	1	6	....	53	6
02	Johnstown, city	156	10	140	10	3	84	....	....	25	....	1	....
50	Bleecker	4	.....	3	1	....	1	....	....	....	....	....	....
51	Broadalbin	41	.....	28	6	1	15	....	....	....	....	2	....
52	Caroga	7	.....	6	....	....	4	....	....	....	....	....	....
53	Ephratah	19	.....	14	3	....	9	7	....	12	....	....	....
54	Johnstown	30	1	26	3	2	5	....	....	1	....	2	....
55	Mayfield	27	.....	17	2	1	11	....	....	....	....	4	....
20	*Mayfield, village*	*4*	.....	*6*	....	....	*4*	....	....	....	....	....	....
56	Northampton	26	2	14	1	....	8	....	....	....	....	....	....
21	*Northville, village*	*24*	.....	*14*	*2*	....	*10*	....	....	*4*	....	*1*	....
57	Oppenheim	20	.....	16	1	....	10	....	....	14	1	....	....
(*22*)	*Dolgeville, village (pt.)*	*2*	.....	.....	....	....	....	....	....	....	....	....	....
[*22*‡	*Dolgeville, village (2158)*	*64*	*1*	*23*	*3*	....	*12*	....	....	*3*	....	*16*	....
58	Perth	15	.....	8	....	....	4	1	....	....	....	....	....
59	Stratford	2	.....	2	....	....	1	....	....	....	....	2	....

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* Saranac Lake, village, located in two counties, Essex and Franklin. Total for entire village given in bracketed line.

† See Saranac Lake, Essex county, for complete total.

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary, and acute miliary, 31, 37e		Other forms, 32, 37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
2	....	*1*	....	....	....	*111*	*46*	*2*	*2*	*2*	....	*1*	*1*	*19*	*24*
6	....	*8*	....	....	....	*1,169*	*196*	*53*	*3*	*5*	....	*5*	*1*	*40*	*24*]
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	61
....	....	....	....	....	....	12	2	....	....	....	....	....	....	2	62
....	....	....	....	*10*	....	*8*	*2*	*1*	....	....	....	*1*	....	*6*	*25*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*26*
....	....	....	....	....	....	3	....	....	....	1	....	1	....	12	63
1	1	3	....	....	....	9	3	....	....	2	....	6	2	56	64
1	....	....	....	....	....	*2*	....	....	....	....	*2*	*3*	....	*25*	*27*
....	....	....	....	....	....	....	1	....	....	....	....	2	....	10	65
7	....	*1*	....	*4*	....	*1*	....	....	....	....	....	....	....	*5*	*28*
....	....	....	....	....	....	3	1	....	....	1	1	6	....	17	66
....	....	3	....	....	....	....	1	....	....	....	....	....	....	7	67
....	....	....	....	....	....	....	5	....	....	....	....	....	....	....	10
31	2	34	3	15	19	1,103	190	56	9	19	32	38	33	406	16
....	1	....	....	1	2	....	6	....	1	....	4	....	5	25	50
3	....	*2*	....	*1*	*3*	*4*	*3*	*2*	....	*1*	*2*	....	*3*	*12*	*20*
....	....	....	....	....	....	1	1	....	1	2	....	7	1	30	51
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*25*
1	....	5	....	....	1	....	1	1	....	....	1	....	1	15	52
....	....	....	....	....	2	....	6	....	....	....	1	....	8	15	53
....	....	....	....	....	....	....	....	....	....	....	....	2	....	6	54
....	....	....	....	....	....	1	1	....	....	....	....	....	1	6	55
6	1	....	....	....	1	1	....	....	....	....	1	1	....	11	56
....	....	3	....	....	....	....	....	....	....	2	2	....	....	10	57
....	....	....	....	....	....	*1*	*1*	....	....	*1*	....	*2*	....	*11*	*21*
....	....	....	....	....	....	....	1	....	....	1	....	....	....	6	58
....	....	2	....	....	....	....	....	1	1	1	....	1	....	15	59
....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	60
....	....	....	....	....	....	1	1	....	....	....	....	....	1	8	61
....	....	....	....	....	*1*	*1*	*1*	....	....	....	*1*	....	*1*	*6*	*22*
....	....	1	....	3	....	5	4	....	1	....	2	1	....	7	62
....	....	1	....	1	2	23	....	....	....	....	....	....	....	7	63
4	....	*7*	....	....	....	*1,058*	*150*	*51*	*1*	*3*	....	*4*	....	*21*	*23*
....	....	1	....	....	1	1	2	....	....	3	3	3	4	40	64
....	....	*8*	*2*	....	*2*	*1*	*5*	....	*4*	*5*	7	*14*	*6*	*105*	*24*
15	....	3	1	....	....	2	2	1	....	....	2	2	3	20	65
....	....	....	....	2	....	1	1	....	....	....	1	....	....	5	66
2	....	1	....	6	1	2	2	....	....	....	2	....	4	15	67
....	....	....	....	1	1	....	2	....	....	....	3	....	....	10	68
201	5	25	5	17	7	47	31	16	2	14	16	67	17	465	17
144	1	21	5	....	6	19	11	7	1	6	9	38	9	250	01
17	2	....	....	12	....	15	6	6	1	5	5	15	3	103	02
....	....	....	....	....	....	....	....	....	....	1	....	1	....	1	50
21	....	1	....	3	....	1	8	....	....	1	1	2	....	21	51
....	....	....	....	....	....	....	....	....	....	....	....	1	....	5	52
....	....	....	....	....	....	....	....	....	....	....	1	1	1	11	53
2	1	....	....	....	....	....	6	....	....	....	....	2	3	14	54
5	....	....	....	....	....	1	1	3	....	....	....	1	....	15	55
11	....	....	....	....	....	*2*	*1*	....	....	*1*	....	*1*	....	*3*	*20*
....	....	....	....	....	....	2	1	....	....	....	....	....	....	13	56
1	....	*1*	....	*1*	*1*	*6*	*1*	....	....	....	....	*3*	*1*	*8*	*21*
....	1	1	....	....	....	....	....	....	....	....	....	2	....	12	57
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	22
23	....	*1*	....	....	....	*3*	*2*	*1*	....	....	....	*5*	....	*16*	*22*]
....	....	1	....	1	....	1	1	....	....	....	....	....	....	7	58
....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	59

‡ Dolgeville, village, located in two counties, Fulton and Herkimer. Total for entire village given in bracketed line.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
18	GENESEE COUNTY	849	22	558	87	21	272	9	2	7	....	70	....
01	**Batavia, city**	384	15	242	42	7	104	4	1	....	....	35	....
50	Alabama	41	....	30	10	....	9	....	....	2	....	2	....
51	Alexander	36	1	13	1	2	8	....	....	....	....	....	....
20	*Alexander, village*	*1*	....	*1*	....	....	*1*	....	....	....	....	....	....
52	Batavia	31	....	20	4	1	8	....	....	....	....	6	....
53	Bergen	12	....	10	....	....	7	1	1	....	....	5	....
21	*Bergen, village*	*6*	....	*12*	....	....	*6*	....	....	....	....	*1*	....
54	Bethany	31	....	21	2	2	13	....	....	....	....	2	....
55	Byron	15	1	16	2	....	9	....	....	....	....	....	....
56	Darien	31	....	13	1	....	8	1	....	....	....	8	....
57	Elba	27	....	9	2	....	5	....	....	....	....	....	....
22	*Elba, village*	*6*	....	*6*	*1*	....	*3*		....	....	....	*1*	....
58	Leroy	21	1	14	1	1	7	....	....	....	....	....	....
23	*Leroy, village*	*77*	*1*	*50*	*6*	*3*	*23*	....	....	....	....	*4*	....
59	Oakfield	19	1	8	....	....	3	....	....	....	....	....	....
24	*Oakfield, village*	*42*	....	*25*	*9*	*2*	*7*	*1*	....	*4*	....	....	....
60	Pavilion	23	1	22	1	2	15	....	....	....	....	....	....
61	Pembroke	28	1	22	5	....	14	2	....	1	....	2	....
25	*Corfu, village*	*6*	....	*7*	....	....	*6*	....	....	....	....	*4*	....
62	Stafford	13	....	18	....	1	16	....	....	....	....	....	....
19	GREENE COUNTY	48	17	415	37	13	245	23	3	163	2	30	....
50	Ashland	12	....	6	2	....	4	....	....	....	....	1	....
51	Athens	7	....	13	2	....	6	....	....	....	....	1	....
20	*Athens, village*	*33*	....	*21*	*3*	....	*15*	*1*	....	....	....	....	....
52	Cairo	27	1	41	1	1	22	5	....	35	2	1	....
53	Catskill	63	3	56	8	4	24	1	....	8	....	2	....
21	*Catskill, village*	*84*	*2*	*62*	*4*	*4*	*35*	*5*	*1*	....	....	*3*	....
54	Coxsackie	20	....	14	1	....	8	2	....	....	....	....	....
22	*Coxsackie, village*	*26*	....	*28*	*1*	*1*	*21*	*3*	*1*	....	....	*3*	....
55	Durham	22	....	29	2	....	21	....	....	....	....	2	....
56	Greenville	19	....	24	3	....	18	3	....	2	....	2	....
57	Halcott	8	....	4	1	....	2	....	....	....	....	....	....
58	Hunter	29	1	19	1	....	11	....	....	1	....	....	....
23	*Hunter, village*	....	....	*3*	....	*1*	*1*	....	....	*95*	....	....	....
24	*Tannersville, village*	*16*	....	*3*	....	....	*3*	....	....	....	....	....	....
59	Jewett	21	2	13	2	....	7	2	1	3	....	....	....
60	Lexington	36	....	25	2	1	14	....	....	2	....	7	....
61	New Baltimore	26	3	18	1	1	11	....	....	10	....	3	....
62	Prattsville	23	4	12	1	....	7	....	....	....	....	1	....
63	Windham	14	1	24	2	....	15	1	....	7	....	4	....
20	HAMILTON COUNTY	58	2	53	9	1	18	3	....	4	....	1	....
50	Arietta	....	....	4	1	....	1	....	....	....	....	....	....
51	Benson	1	....	1	....	....	....	....	....	....	....	....	....
52	Hope	1	....	6	....	....	3	....	....	....	....	....	....
53	Indian Lake	16	....	14	5	1	4	1	....	1	....	1	....
54	Inlet	1	....	4	....	....	2	....	....	....	....	....	....
55	Lake Pleasant	10	....	5	1	....	1	....	....	....	....	....	....
56	Long Lake	18	1	11	2	....	3	2	....	3	....	....	....
57	Morehouse	....	1	1	....	....	1	....	....	....	....	....	....
58	Wells	11	....	7	....	....	3	....	....	....	....	....	....
21	HERKIMER COUNTY	1,542	45	833	103	32	392	17	6	294	2	91	4
01	**Little Falls, city**	381	10	146	27	2	57	5	3	9	....	19	2
50	Columbia	16	....	11	2	....	5	1	....	....	....	....	....
51	Danube	14	2	5	....	....	4	2	....	8	....	1	....
52	Fairfield	23	....	16	4	1	6	....	....	6	....	2	....
20	*Middleville, village (59)*	*14*	....	*7*	*2*	*1*	*3*	....	....	*2*	....	....	....
53	Frankfort	47	....	25	1	2	15	1	....	1	....	1	....
21	*Frankfort, village*	*143*	*4*	*42*	*10*	*4*	*13*	....	....	*2*	....	....	....
54	German Flats	9	1	21	....	1	16	....	....	....	....	1	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31,37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
129	6	45	7	2	11	21	17	3	1	14	2	49	14	414	18
57	1	21	2	...	3	7	6	...	...	6		20	8	190	01
10	1	...	...	...	3	2	1	2	...	...	2	5	2	16	50
5	...	3	1	...	...	2	2	1	...	...	1	...	...	9	51
...	...	...	...	...	...	*1*	...	...	...	...	...	...	...	*1*	*20*
5	1	1	...	...	1	1	...	...	...	...	1	...	...	17	52
4	...	...	...	...	...	...	...	...	...	...	...	1	...	8	53
14	...	*2*	...	...	...	...	...	...	...	...	...	*3*	...	*9*	*21*
...	...	1	1	...	...	...	1	...	...	...	1	2	...	16	54
...	...	5	...	...	...	...	1	...	1	...	1	2	...	11	55
5	...	5	...	2	...	...	...	...	...	...	...	1	...	12	56
...	...	1	...	...	...	...	...	...	...	1	3	1	1	3	57
...	...	...	...	...	...	...	...	...	...	*1*	*1*	...	...	*3*	*22*
2	...	1	1	...	...	1	...	...	...	...	4	2	...	7	58
2	...	*3*	*1*	...	*1*	7	*3*	...	...	*2*	*3*	*3*	...	*37*	*23*
1	...	...	...	...	...	...	...	...	...	...	...	2	...	6	59
5	*2*	*2*	*1*	...	...	...	*1*	...	...	...	...	*2*	...	*19*	*24*
...	1	...	...	...	1	...	1	...	...	1	...	2	1	15	60
19	...	...	...	...	2	...	1	...	...	2	1	1	2	13	61
...	...	...	...	...	...	...	...	...	...	...	...	...	...	*7*	*25*
...	...	...	...	...	...	...	...	...	...	1	...	2	...	15	62
164	3	28	4	15	4	59	29	5	7	14	13	39	3	294	19
1	1	...	...	...	...	...	...	...	...	...	...	1	...	4	50
1	...	...	...	...	...	3	...	...	...	1	...	1	1	10	51
1	...	...	...	...	...	*3*	...	*1*	...	*1*	...	*3*	...	*17*	*20*
10	...	2	...	3	...	12	3	...	...	2	...	5	...	29	52
...	...	5	2	7	1	7	7	1	2	3	...	3	...	33	53
63	...	*18*	*1*	...	*1*	*15*	*5*	*3*	*2*	...	*3*	*8*	*2*	*39*	*21*
...	...	...	...	...	...	...	2	...	1	...	1	1	...	9	54
...	...	...	...	...	...	*3*	*2*	...	...	*3*	*1*	*2*	...	*19*	*22*
...	...	...	...	...	...	1	3	...	...	2	...	3	...	21	55
11	1	1	...	3	...	6	1	...	1	...	...	2	...	19	56
...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	57
...	...	1	...	...	...	...	3	...	...	...	1	...	...	15	58
...	...	...	*1*	...	...	*1*	...	...	...	...	...	*1*	...	*1*	*23*
...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	*2*	*24*
...	...	...	...	...	1	...	...	...	...	...	2	1	...	8	59
35	...	...	...	2	1	...	1	...	...	1	2	1	...	19	60
6	1	1	...	...	...	2	1	...	...	...	1	3	...	12	61
...	...	...	...	...	...	3	1	...	...	...	2	...	...	9	62
36	...	...	...	...	...	3	...	...	1	1	...	3	...	19	63
15	...	...	...	1	...	8	5	1	...	4	1	6	2	3[illegible]	20
...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	50
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	51
3	...	...	...	...	...	...	1	...	...	...	...	1	...	4	52
...	...	...	...	...	...	1	...	...	...	2	...	2	*1*	9	53
...	...	...	...	...	...	1	1	...	...	...	1	...	...	2	54
...	...	...	...	...	...	...	1	...	...	1	...	...	...	3	55
12	...	...	...	1	...	6	2	1	...	1	...	1	...	7	56
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	57
...	...	...	...	...	...	...	...	...	...	...	...	1	...	6	58
102	4	98	11	9	1	91	45	9	7	23	31	75	12	612	21
20	...	13	...	5	...	4	3	1	1	2	5	13	4	113	01
...	...	2	...	...	...	1	1	...	...	...	...	3	1	6	50
...	...	2	...	...	...	...	...	...	...	...	...	...	...	5	51
...	...	1	...	...	...	1	1	...	...	...	3	3	...	9	52
...	...	*1*	...	...	...	*2*	...	*2*	...	*5*	...	*1*	...	*3*	*20*
1	...	4	1	...	...	1	1	...	...	...	1	2	...	20	53
37	*2*	*12*	*1*	...	...	*5*	*3*	*2*	*2*	...	...	*3*	*2*	*29*	*21*
...	...	...	...	...	...	3	...	...	...	1	...	2	...	18	54

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	Deaths at age of — Under 1 year	Deaths at age of — 1-4 years	Deaths at age of — 60 years and over	Cases and — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles, 7 — Cases	Measles, 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
	HERKIMER CO.— (*Concluded*)												
22	*Ilion, village*	*208*	*6*	*114*	*8*	*2*	*53*	*1*	*1*	*8*	....	*2*	....
23	*Mohawk, village*	*51*	*2*	*37*	*3*	....	*24*	....	....	*5*	....	*7*	*1*
55	Herkimer	37	4	52	1	1	34	....	....	43	....	2	....
24	*Herkimer, village*	*272*	*8*	*128*	*20*	*11*	*45*	*3*	*1*	*93*	*2*	*9*	....
56	Litchfield	16	.....	10	2	....	5	....	....	....	....	1	....
57	Little Falls	15	.....	11	1	....	5	....	1	12	....	6	1
58	Manheim	7	.....	4	....	....	2	....	....	13	....	8	....
(25)	*Dolgeville (1757) (pt.)**	*62*	*1*	*23*	*3*	....	*12*	....	....	*3*	....	*15*	....
59	Newport (20)	16	.....	6	....	....	3	....	....	30	....	3	....
26	*Newport, village*	*14*	*1*	*7*	....	....	*5*	....	....	*32*	....	*5*	....
27	*Poland, village (62)*	*8*	.....	*9*	....	....	*7*	....	....	*7*	....	....	....
60	Norway	10	.....	5	1	....	3	....	....	6	....	2	....
61	Ohio	15	.....	2	....	....	....	....	....	....	....	....	....
62	Russia (27)	20	3	13	2	....	10	2	....	2	....	....	....
28	*Cold Brook, village*	*5*	.....	*4*	*2*	....	....	....	....	*11*	....	....	....
63	Salisbury	33	.....	41	2	3	15	2	....	....	....	5	....
64	Schuyler	19	1	17	3	....	9	....	....	....	....	....	....
65	Stark	21	.....	12	2	....	7	....	....	....	....	....	....
66	Warren	17	.....	12	2	....	6	....	....	1	....	1	....
67	Webb	10	.....	16	....	1	8	....	....	....	....	1	....
29	*Old Forge, village*	*19*	.....	*9*	*3*	*1*	....	....	....	....	....	....	....
68	Wilmurt	....	.....	....	....	....	....	....	....	....	....	....	....
69	Winfield	13	.....	10	1	1	6	....	....	....	....	....	....
30	*West Winfield, village*	*7*	*2*	*18*	*1*	*1*	*14*	....	....	....	....	....	....
22	JEFFERSON COUNTY	1,852	77	1,130	168	32	611	50	5	1,784	7	213	3
01	**Watertown, city**	800	43	483	89	19	290	14	2	1,237	3	77	3
50	Adams	32	1	24	2	....	16	2	....	54	....	2	..
20	*Adams, village*	*18*	*1*	*32*	*3*	....	*23*	*1*	....	....	....	....	....
51	Alexandria	33	.....	30	2	1	19	1	....	11	....	13	....
21	*Alexandria Bay, village*	*39*	.....	*12*	*4*	....	*6*	*1*	....	*2*	....	....	....
52	Antwerp	31	1	13	1	....	9	3	....	29	....	4	....
22	*Antwerp, village*	*10*	.....	*13*	....	*1*	*7*	....	....	*13*	....	....	....
53	Brownville	26	2	16	1	1	9	2	1	7	....	2	....
23	*Brownville, village*	*10*	*1*	*15*	*4*	....	*8*	....	....	*11*	*1*	*7*	....
24	*Dexter, village*	*26*	*1*	*13*	*2*	....	*10*	*3*	....	*7*	....	*1*	....
25	*Glen Park, village*	*11*	.....	*4*	*1*	....	*3*	....	....	*2*	....	....	....
54	Cape Vincent	25	.....	14	1	....	11	4	....	52	....	....	....
26	*Cape Vincent, village*	*15*	*1*	*9*	....	*1*	*5*	....	....	*40*	....	....	....
55	Champion	27	1	19	2	....	11	....	....	....	....	2	....
27	*West Carthage, village*	*49*	*2*	*29*	*7*	*1*	*12*	*4*	....	....	....	*2*	....
56	Clayton	39	.....	16	3	1	10	....	....	5	....	1	....
28	*Clayton, village*	*36*	*1*	*25*	*2*	....	*18*	....	....	*58*	....	....	....
57	Ellisburg	48	2	29	6	....	18	....	....	5	....	11	....
29	*Belleville, village*	*2*	*2*	*7*	....	....	*5*	....	....	*1*	....	....	....
30	*Ellisburg, village*	*5*	.....	*3*	....	....	*3*	....	....	....	....	*1*	....
31	*Mannsville, village*	*2*	.....	*10*	*1*	....	*9*	....	....	....	....	*3*	....
58	Henderson	23	.....	8	....	....	5	....	....	1	....	4	....
32	*Henderson, village*	*3*	.....	*7*	*1*	....	*4*	....	....	*1*	....	*1*	....
59	Hounsfield	28	1	12	....	....	8	2	1	2	....	6	....
33	*Sacketts Harbor, village*	*24*	.....	*9*	....	....	*5*	....	....	....	....	*12*	....
60	Le Ray	28	1	15	1	....	8	....	....	8	....	3	....
34	*Black River, village (67)*	*12*	.....	*12*	*1*	....	*8*	*1*	....	*45*	....	*1*	....
61	Lorraine	26	1	16	4	....	9	....	....	14	....	....	....
62	Lyme	23	1	13	2	....	9	....	....	4	....	2	....
35	*Chaumont, village*	*12*	*1*	*12*	*3*	*2*	*6*	....	....	....	....	....	....
63	Orleans	20	.....	12	1	....	11	....	....	3	....	6	....
64	Pamelia	7	2	22	1	....	20	....	....	10	....	....	....
65	Philadelphia	22	.....	13	1	1	7	....	....	2	*1*	....	....
36	*Philadelphia, village*	*13*	....	*9*	....	....	*7*	....	....	*2*	....	....	*6*
66	Rodman	20	.....	14	2	....	11	1	....	47	....	9	....

* See Dolgeville, Fulton

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —															
Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
1		*4*		*1*	*1*	*20*	*3*	*3*		*2*	*8*	*10*	*1*	88	*22*
9				*3*		*3*			*1*	*2*		*5*	*1*	*27*	*23*
						9	2				2	3		45	55
		43	*6*			*22*	*4*		*2*	*6*	*5*	*8*	*1*	*93*	*24*
							1				3			6	56
		2	1			1	1					1		6	57
						1	1							3	58
23		*1*				*3*	*2*	*1*				*5*		*16*	*(25)*
												2		4	59
						3				*1*	*1*	*1*		*4*	*26*
3						*1*				*1*				*8*	*27*
										1				4	60
							1				1				61
3		6	1							1		2	1	8	62
1	*1*													*3*	*28*
		5	1			7	17			1	1	1		20	63
		1								2		2	1	12	64
												1		11	65
1												1		11	66
1		1				3	2				1	1		12	67
2	1						*2*							*6*	*29*
															68
									1					9	69
						1						*5*		*13*	*30*
142	4	42		7	9	67	42	9	5	25	29	102	29	870	22
77	2	13		3	1	38	26	6	1	6	10	39	16	374	01
		1						1				2		22	50
											1	*6*		*25*	*20*
							1			2	1		1	25	51
2		*3*				*2*				*1*		*3*	*1*	7	*21*
											2	*2*		9	52
							1							*12*	*22*
7										1		1	1	12	53
							1			*2*		*1*		*10*	*23*
					1	*1*						*1*		*11*	*24*
														4	*25*
						1					1	3		10	54
						3			*1*					*8*	*26*
					1		1			2	1	1		13	55
					2		*1*			*1*	*2*	*4*	*1*	*18*	*27*
7	1				1		2				2		1	9	56
9		*1*					*1*		*2*			*3*		*19*	*28*
						2	1	1		2		3	1	22	57
						5	*1*				1	*1*		*4*	*29*
														3	*30*
												1		*9*	*31*
						1						2		6	58
												3		*4*	*32*
												1		10	59
4		*2*				*1*				*1*		*1*		7	*33*
		1				2						2		13	60
						2	*2*					*1*	*1*	*8*	*34*
								1		1		1		14	61
												1		12	62
										1		*1*	*1*	*9*	*35*
19		17					1							11	63
												2	1	19	64
					1	1	1					1	2	7	65
						2	*1*					*1*		7	*36*
		2		4					1	1		1	1	10	66

county, for complete total.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF —			CASES AND					
								Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
					Under 1 year	1-4 years	60 years and over	Cases	Deaths	Cases	Deaths	Cases	Deaths
	JEFFERSON Co.— (*Concluded*)												
67	Rutland (34)	33	....	14	1	....	7	....	....	5	....	....	....
68	Theresa	13	....	8	1	....	5	....	....	14	....	8	....
37	*Theresa, village*	33	1	21	2	1	16	1	....	25	....	3	....
69	Watertown	24	1	6	....	....	5	....	....	2	....	2	....
70	Wilna	71	2	35	9	3	16	5	....	49	1	5	....
38	*Carthage, village*	104	5	47	7	....	23	5	1	8	1	19	....
39	*Lafargeville, village*	6	....	4	....	....	4	....	....	....	....	....	....
40	*Deferiet, village*	....	....	....	....	....	....	....	....	....	....	....	....
71	Worth	14	2	5	....	....	5	....	....	12	....	....	....
24	LEWIS COUNTY	537	28	311	31	15	187	9	2	77	1	44	2
50	Croghan	46	1	16	2	....	7	1	1	2	....	3	....
20	*Croghan, village (62)*	13	....	8	....	1	3	....	....	....	....	7	....
51	Denmark	29	2	15	1	1	9	....	....	....	....	....	....
21	*Copenhagen, village*	8	1	17	....	....	14	....	....	....	....	....	....
52	Diana	31	3	21	2	....	15	3	....	8	....	....	....
22	*Harrisville, village*	30	....	6	2	....	2	1	....	2	....	1	....
53	Greig	15	....	10	1	....	7	....	....	1	....	....	....
54	Harrisburg	15	1	4	....	2	1	....	....	....	....	....	....
55	High Market	6	....	3	2	1	....	....	....	....	....	....	....
56	Lewis	22	3	8	2	....	1	....	....	....	....	....	....
57	Leyden	20	1	10	....	....	7	....	....	12	....	6	..
23	*Port Leyden, village (59)*	11	1	11	....	....	9	....	....	2	....	....	....
58	Lowville	28	....	15	1	....	12	....	....	1	....	....	....
24	*Lowville, village*	60	3	44	4	1	29	2	....	1	....	5	1
59	Lyonsdale (23)	20	1	12	3	2	5	1	1	1	....	....	....
25	*Lyons Falls, village (67)*	25	1	14	3	3	5	....	....	16	1	3	....
60	Martinsburg	36	4	26	3	1	17	....	....	1	....	2	....
61	Montague	12	1	6	1	....	2	....	....	2	....	1	....
62	New Bremen (20)	37	2	15	....	1	8	1	....	1	....	9	1
63	Osceola	2	....	7	....	....	6	....	....	....	....	....	....
64	Pinckney	10	....	9	1	....	5	....	....	19	....	7	....
65	Turin	26	1	10	3	1	6	....	....	2	....	....	....
26	*Turin, village*	5	....	2	....	....	2	....	....	....	....	....	....
66	Watson	8	1	6	....	....	6	....	....	6	....	....	....
67	West Turin (25)	20	1	10	....	1	3	....	....	....	....	....	....
27	*Constableville, village*	4	....	6	....	....	6	....	....	....	....	....	....
25	LIVINGSTON COUNTY	798	20	542	62	17	248	10	2	37	....	59	2
50	Avon	24	1	10	2	....	5	....	....	....	....	....	....
20	*Avon, village*	52	1	29	5	4	13	....	....	....	....	1	....
51	Caledonia	20	1	7	2	1	2	....	....	2	....	3	....
21	*Caledonia, village*	17	1	16	1	1	11	1	....	1	....	1	....
52	Conesus	24	....	9	....	1	4	....	....	1	....	....	....
53	Geneseo	24	....	21	3	....	14	....	....	....	....	....	....
22	*Geneseo, village*	38	....	16	1	1	8	....	....	1	....	....	....
54	Groveland	39	2	11	4	1	2	....	....	2	....	1	....
55	Leicester	51	2	14	6	....	2	2	1	1	....	1	....
23	*Moscow, village*	7	....	2	....	....	2	....	....	....	....	....	....
56	Lima	22	....	16	1	....	12	....	....	....	....	....	....
24	*Lima, village*	10	....	15	....	....	10	....	....	1	....	....	....
57	Livonia	20	1	30	2	4	12	2	1	....	..	14	2
25	*Livonia, village*	11	....	13	....	....	10	1	....	1	....	12	..
58	Mt. Morris	25	1	18	2	....	12	....	....	3	....	1	....
26	*Mt. Morris, village*	125	6	35	11	1	15	2	....	1	....	2	..
59	North Dansville	4	....	2	....	....	1	....	....	....	....	1	....
27	*Dansville, village*	93	2	65	6	3	37	....	....	....	....	8	....
60	Nunda	12	1	14	1	....	9	....	....	6	....	....	....
28	*Nunda, village*	12	....	15	....	....	13	....	....	10	....	....	....
61	Ossian	13	....	5	1	....	3	....	....	....	....	....	....
62	Portage	17	....	9	2	....	6	....	....	7	....	....	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
1	1	...	...	...	...	...	1	...	...	...	1	...	...	11	67
...	...	...	...	...	...	...	...	...	...	...	...	3	...	5	68
...	...	...	...	...	*1*	...	...	...	...	...	*2*	*4*	...	*14*	*37*
...	...	...	...	...	...	1	...	...	...	...	...	...	...	6	69
...	...	...	...	...	...	1	...	...	...	1	3	1	...	29	70
12	...	*2*	...	...	*1*	*4*	...	...	...	*1*	*1*	*5*	*1*	*36*	*38*
...	...	...	...	...	...	...	...	...	...	...	*1*	...	...	*3*	*39*
4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*40*
...	...	...	...	...	...	...	...	...	...	2	...	...	...	3	71
19	1	2	2	1	2	18	13	2	5	8	10	20	9	236	24
2	1	...	...	...	1	1	2	...	...	...	...	2	1	8	50
...	...	...	...	...	*1*	*1*	*1*	...	*1*	...	*1*	...	...	*4*	*20*
...	...	...	...	...	...	...	...	...	...	...	1	1	1	12	51
...	...	...	...	...	...	...	*1*	...	...	*1*	...	*1*	...	*14*	*21*
...	...	...	...	...	...	2	...	...	1	1	1	2	...	16	52
2	...	...	...	...	...	*4*	*1*	...	...	...	...	...	*2*	*3*	*22*
...	...	...	...	...	...	...	...	...	...	...	1	1	...	8	53
...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	54
...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	55
...	...	...	...	...	...	1	1	1	1	...	2	...	...	4	56
...	...	...	...	...	...	...	...	...	...	1	...	1	...	8	57
...	...	...	...	...	...	*1*	*1*	...	...	...	...	...	...	*10*	*23*
...	...	...	...	...	...	2	1	...	...	...	...	1	...	13	58
4	...	*2*	*1*	...	...	*1*	...	...	*1*	*2*	...	*3*	*1*	*36*	*24*
...	...	...	...	...	...	...	...	...	...	...	...	1	2	8	59
...	...	...	...	...	...	...	...	...	...	...	*1*	*1*	...	*11*	*25*
3	...	...	1	1	...	...	1	...	...	...	1	1	1	21	60
...	...	...	...	...	...	...	1	...	...	...	...	...	...	5	61
...	...	...	...	...	...	4	2	...	...	...	2	1	...	9	62
8	...	...	...	...	...	1	...	...	...	...	...	...	...	7	63
...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	64
...	...	...	...	...	...	...	...	1	1	2	...	...	...	7	65
...	...	...	...	...	...	...	...	...	...	...	...	...	...	*2*	*26*
...	...	...	...	...	...	...	...	...	...	...	...	2	...	4	66
...	...	...	...	...	...	...	1	...	...	...	...	1	1	7	67
...	...	...	...	...	...	...	...	...	...	...	...	*1*	...	*6*	*27*
220	7	55	5	2	7	17	23	...	5	20	22	39	22	388	25
15	...	1	1	...	...	2	...	...	...	...	...	1	...	8	50
20	*2*	...	...	...	...	...	*2*	...	...	...	*3*	*1*	*4*	*17*	*20*
7	...	2	...	...	...	...	...	...	...	...	...	...	...	7	51
13	...	*1*	...	...	...	...	...	...	...	*1*	*1*	...	...	*14*	*21*
4	1	5	...	...	...	1	...	...	...	...	...	1	...	7	52
7	1	...	...	...	1	...	...	...	...	...	...	1	...	18	53
25	...	*14*	*2*	...	*2*	*2*	...	...	...	...	...	*1*	*2*	*9*	*22*
2	...	6	...	...	...	2	1	...	...	...	...	...	2	8	54
21	...	...	...	...	...	2	...	...	...	...	...	...	5	8	55
...	...	...	...	...	...	...	...	...	...	...	...	...	...	*2*	*23*
6	1	...	...	...	...	...	1	...	...	...	...	2	...	12	56
7	...	*3*	*1*	...	*1*	...	...	...	...	...	...	*5*	...	*8*	*24*
4	...	3	1	...	...	...	...	...	...	1	...	5	1	19	57
5	...	*1*	...	...	...	*1*	...	...	...	...	...	*3*	...	*10*	*25*
...	...	...	...	...	...	...	1	...	1	1	1	2	1	11	58
30	*1*	*2*	...	...	...	*4*	...	...	...	...	*2*	*2*	*3*	*27*	*26*
...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	59
5	...	*2*	...	...	...	*1*	...	...	...	*3*	...	*4*	...	*58*	*27*
8	1	...	...	...	...	1	1	...	...	...	1	3	...	8	60
29	...	*2*	...	...	...	*1*	...	...	...	*1*	*1*	*2*	...	*11*	*28*
...	...	...	...	...	...	...	...	...	...	...	...	...	1	4	61
3	...	...	...	...	...	...	...	...	...	...	1	...	...	8	62

Table 39 — STATE OF NEW YORK (exclusive of New York City): ***Births, stillbirths, certain important***

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	DEATHS AT AGE OF — 1-4 years	DEATHS AT AGE OF — 60 years and over	CASES AND — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles, 7 — Cases	Measles, 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
	LIVINGSTON CO.— (*Concluded*)												
63	Sparta	20	1	10			9						
64	Springwater	42		23	4		13	2				8	
65	West Sparta	15		5			5					4	
66	York	55		28	6		11					2	
10	Craig Colony for Epileptics, Sonyea	6		104	2		7						
26	MADISON COUNTY	869	36	579	63	19	339	16	3	202	1	115	1
01	**Oneida, city**	292	7	149	17	3	71	6	1	1		41	
50	Brookfield	31	1	23	3		16		1				
20	*Brookfield, village*	*4*		*5*			*4*	*1*		*40*		*1*	
51	Cazenovia	35	2	34	3	1	17			1			
21	*Cazenovia, village*	*20*		*35*	*1*	*3*	*23*			*2*		*1*	
52	DeRuyter	7	1	4			3	1		1		5	
22	*DeRuyter, village*	*8*		*12*			*10*			*1*			
53	Eaton	37	1	38	5		25			39		12	
23	*Morrisville, village*	*12*		*7*		*1*	*5*					*4*	*1*
54	Fenner	11		9			8					1	
55	Georgetown	19		7	2		3					1	
56	Hamilton	37	1	14	1		11			10		2	
(24)	*Earlville, village (0868) (pt.)**	*13*		*10*	*1*		*7*	*1*	*1*	*2*			
25	*Hamilton, village*	*23*	*1*	*21*	*5*		*13*			*2*		*4*	
57	Lebanon	24		8	1		5	2				3	
58	Lenox	23	4	27	3	3	13	2		10			
26	*Canastota, village*	*112*	*10*	*52*	*4*	*7*	*24*			*61*	*1*	*3*	
27	*Wampsville, village*	*5*	*1*	*5*	*1*		*2*						
59	Lincoln	16		8			4			8			
60	Madison	14	1	16	1		11	1		7		7	
28	*Madison, village*	*3*		*7*			*7*						
61	Nelson	21	1	18	1		12	1		13		3	
62	Smithfield	16		10		1	6			1			
63	Stockbridge	18	2	17	4		12	1		3		18	
64	Sullivan	58	2	27	9		13					8	
29	*Chittenango, village*	*10*	*1*	*16*	*1*		*14*					*1*	
27	MONROE COUNTY	7,844	279	4,421	612	231	1,856	89	12	96	2	813	30
01	**Rochester, city**	6,821	247	3,516	546	207	1,406	59	9	76	2	662	24
50	Brighton	34	4	136	4		26	1		1		3	
51	Chili	36		23	2		13					3	
52	Clarkson	25		14	2	2	8					2	
53	Gates	18	2	17	1		6					2	
54	Greece	69		32	4	2	14	1				4	
20	*Charlotte, village*												
55	Hamlin	37		21	1	1	15			1		1	
56	Henrietta	20	1	12		1	6					2	2
57	Irondequoit	102	4	59	12	3	25					4	
58	Mendon	26	1	15	2		8	3				7	
21	*Honeoye Falls, village*	*11*	*1*	*23*	*1*		*15*	*20*	*2*	*1*		*11*	
59	Ogden	33	1	16	2		8					4	
22	*Spencerport, village*	*16*		*10*	*1*		*7*					*1*	
60	Parma	36	1	26	2	2	16			1		5	
23	*Hilton, village*	*11*		*9*			*8*					*3*	
61	Penfield	41	1	28		3	17			3		7	
62	Perinton	38	1	22	3	1	14			1		6	
24	*East Rochester, village* (63)	*118*	*3*	*36*	*5*	*1*	*19*					*2*	
25	*Fairport, village*	*83*	*2*	*48*	*6*		*28*	*1*		*2*		*8*	
63	Pittsford (24)	12		11	2		7					14	
26	*Pittsford, village*	*17*	*1*	*14*	*1*	*1*	*5*			*4*		*17*	
64	Riga	29	3	10	2	1	6	1				4	1

* See Earlville, Chenango

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —															
						TUBERCULOSIS				PNEUMONIA					
Whooping cough, 9		Diphtheria, 10		Influenza, 11		Pulmonary, and acute miliary, 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101	Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	2	....	....	1	....	....	....	....	....	1	....	....	8	63
3	....	1	....	2	1	....	....	....	....	....	1	2	....	19	64
....	....	....	....	....	1	....	....	....	....	....	....	....	....	4	65
3	....	2	....	....	....	....	1	....	....	1	1	2	3	20	66
3	....	8	....	....	....	....	16	....	4	12	9	2	....	61	10
156	1	56	4	....	....	22	17	4	6	2	24	53	16	420	26
....	....	4	1	....	....	1	3	2	3	2	2	14	4	118	01
....	....	2	....	....	....	1	....	....	....	....	1	3	2	16	50
11	....	*1*	....	....	....	....	....	....	....	....	....	*3*	....	*2*	*20*
....	....	5	....	....	....	....	1	....	....	2	....	1	....	30	51
3	....	*7*	....	....	....	....	*1*	....	*3*	*1*	*2*	*1*	....	*27*	*21*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	52
....	....	....	....	....	....	....	*1*	....	....	*1*	*1*	....	....	*9*	*22*
6	....	....	....	....	....	3	1	....	....	1	1	3	....	32	53
15	....	....	....	....	....	....	....	....	....	*1*	*1*	*2*	....	*2*	*23*
....	....	....	....	....	....	....	....	....	....	....	1	1	....	7	54
....	....	....	....	....	....	....	....	....	1	....	....	....	....	6	55
8	....	1	....	....	....	1	....	....	....	2	2	3	....	7	56
13	....	....	....	....	....	....	....	....	....	....	....	*2*	....	*7*	(*24*)
27	....	....	....	....	....	*1*	....	....	....	*3*	*2*	*1*	*1*	*14*	*25*
9	....	....	....	....	....	....	....	....	....	....	....	....	....	8	57
1	....	2	1	....	....	1	2	....	....	1	3	1	1	18	58
12	....	*23*	*1*	....	....	*5*	*1*	*1*	*1*	*2*	*2*	*6*	*5*	*33*	*26*
....	....	....	....	....	....	....	*1*	....	....	*1*	....	....	....	*3*	*27*
7	....	....	....	....	....	....	....	....	....	....	....	1	....	7	59
4	....	....	....	....	....	1	....	....	....	....	1	1	....	14	60
....	....	....	....	....	....	*1*	....	....	....	....	....	*1*	....	*6*	*28*
8	....	4	1	....	....	1	....	....	....	....	3	2	....	12	61
....	....	....	....	....	....	....	....	....	....	1	....	....	....	9	62
26	1	....	....	....	....	2	2	....	....	....	1	2	1	10	63
....	....	2	....	....	....	4	3	....	....	1	1	2	2	18	64
....	....	....	....	....	....	....	*1*	*1*	....	....	....	*5*	....	*10*	*29*
933	47	1,650	88	11	11	607	279	57	44	122	136	413	184	3,051	27
559	41	1,450	78	6	4	541	149	53	41	96	12[illegible]	342	16	2,444	01
21	....	*6*	....	....	....	*11*	*89*	*1*	*2*	....	*1*	7	*3*	*34*	*50*
3	....	*2*	....	....	*1*	*1*	*2*	....	....	....	....	3	....	17	51
1	....	7	....	....	....	2	....	....	....	....	....	....	....	14	52
....	....	6	....	....	....	....	....	1	1	....	....	1	1	14	53
2	....	7	....	....	....	8	....	....	....	2	1	5	1	23	54
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*20*
29	....	6	....	....	....	4	1	1	....	2	....	1	1	16	55
....	....	3	1	....	....	....	1	....	....	....	....	1	....	7	56
95	....	25	....	....	....	7	4	1	....	....	2	4	6	43	57
22	....	1	....	....	....	....	....	....	....	....	....	2	1	12	58
....	....	....	....	*1*	*1*	....	....	....	....	*1*	*1*	*3*	....	*15*	*21*
2	....	8	1	....	1	2	1	....	....	1	....	....	....	12	59
....	....	*4*	*1*	*1*	....	....	*1*	....	....	....	....	*1*	....	*7*	*22*
20	....	14	1	....	1	7	1	....	....	2	2	2	....	17	60
27	....	*7*	....	....	....	*2*	....	....	....	*1*	....	*1*	....	*7*	*23*
15	1	14	1	....	1	2	2	....	....	....	....	6	....	17	61
6	....	5	....	1	....	....	2	....	....	....	1	3	1	15	62
35	....	*32*	*1*	....	....	*4*	*1*	....	....	*3*	*3*	*3*	*1*	*24*	*24*
3	....	*4*	....	....	*1*	*7*	*1*	....	....	*3*	*3*	*4*	....	*36*	*25*
3	....	8	....	....	....	1	....	....	....	1	....	2	....	8	63
1	....	*21*	*2*	....	....	*1*	....	....	....	....	....	*3*	*1*	*8*	*26*
7	....	....	....	....	....	....	....	....	....	1	....	3	....	5	64

county for complete total.

Table 39 — STATE OF NEW YORK (exclusive of New York City): ***Births, stillbirths***
certain important

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
27	*Churchville, village*	*10*	*1*	*14*	*1*	....	*9*	....	....	*5*	....	....	....
65	Rush	18	....	24	....	1	14	1	....	....	....	5	2
66	Sweden	19	3	14	2	....	8	....	....	....	....	9	....
28	*Brockport, village*	*47*	....	*51*	*3*	*2*	*32*	....	....	....	....	*7*	....
67	Webster	43	1	43	4	1	30	1	....	3	....	2	....
29	*Webster, village*	*26*	....	*9*	*1*	*1*	*6*	....	....	....	....	*6*	....
68	Wheatland	29	1	11	....	1	7	1	1	....	....	9	1
30	*Scottsville, village*	*16*	....	*10*	*2*	....	*7*	....	....	....	....	*3*	....
10	Rochester State Hospital	5	....	147	....	....	64	....	....	....	....	....	....
28	MONTGOMERY COUNTY	1,248	31	755	96	25	382	8	....	277	....	30	....
01	Amsterdam, city	821	21	415	70	19	170	6	....	124	....	16	....
50	Amsterdam	23	1	34	2	2	10	....	....	....	....	2	....
20	*Fort Johnson, village*	*8*	*1*	*10*	*2*	....	*8*	....	....	....	....	....	....
21	*Hagaman, village*	*16*	....	*10*	....	....	*7*	....	....	*6*	....	....	....
51	Canajoharie	17	....	20	2	....	17	....	....	1	....	....	....
22	*Canajoharie, village*	*40*	....	*35*	*1*	....	*26*	*1*	....	*4*	....	....	....
52	Charleston	18	1	7	....	....	6	....	....	....	....	....	....
53	Florida	27	....	17	1	....	10	....	....	7	....	....	....
54	Glen	13	2	16	1	1	11	....	....	1	....	....	....
23	*Fultonville, village*	*17*	....	*11*	....	....	*9*	....	....	....	....	....	....
55	Minden	28	2	18	1	....	15	....	....	4	....	....	....
24	*Fort Plain, village*	*35*	....	*43*	*2*	*1*	*31*	....	....	*7*	....	*2*	....
56	Mohawk	13	....	15	2	....	9	....	....	7	....	....	....
25	*Fonda, village*	*22*	*1*	*14*	*4*	....	*9*	....	....	*8*	....	....	....
57	Palatine	24	....	17	....	1	9	....	....	30	....	....	....
26	*Nelliston, village*	*15*	....	*7*	....	....	*6*	....	....	*16*	....	....	....
27	*Palatine Bridge, village*	*9*	....	*5*	....	....	*3*	....	....	*1*	....	....	....
58	Root	24	1	21	1	1	15	....	....	1	....	4	....
59	St. Johnsville	18	....	10	2	....	4	....	....	24	....	1	....
28	*St. Johnsville, village*	*63*	*1*	*38*	*5*	....	*15*	*1*	....	*36*	....	*5*	....
29	NASSAU COUNTY	2,851	94	1,415	191	61	612	18	5	441	5	291	2
01	Glen Cove, city	244	3	78	13	7	30	1	....	20	2	3	....
50	Hempstead	812	24	388	60	15	176	6	1	39	....	130	....
20	*East Rockaway, village*	*41*	....	*15*	*3*	....	*8*	....	....	....	....	....	....
21	*Floral Park, village (37)*	*43*	....	*22*	*1*	*1*	*9*	*1*	....	*5*	....	*2*	....
22	*Freeport, village*	*134*	*9*	*99*	*9*	*6*	*60*	*2*	....	*2*	....	*92*	....
23	*Hempstead, village*	*109*	*5*	*60*	*7*	*1*	*24*	....	....	*1*	....	*32*	....
24	*Lawrence, village*	*17*	....	*14*	*1*	....	*7*	....	....	....	....	....	....
25	*Rockville Centre, village*	*108*	*8*	*79*	*15*	*1*	*58*	....	....	[illegible]	....	*24*	....
26	*Cedarhurst, village*	*45*	*1*	*16*	*1*	....	*13*	....	....	*2*	....	*8*	....
27	*Lynbrook, village*	*86*	*1*	*57*	*4*	*2*	*35*	....	....	*36*	....	[illegible]	....
31	*Long Beach, village*	*8*	....	*8*	*5*	....	*2*	....	....	*2*	....	....	....
30	**Woodsburgh, village*	....	....	....	....	....	....	....	....	*2*	....	*4*	....
5[illegible]	Garden City	14	1	30	1	....	12	....	....	....	....	....	....
51	North Hempstead (21)	470	14	188	42	14	[illegible]	3	....	196	2	35	1
[illegible]	*Mineola, village*	*257*	*15*	*146*	*11*	*6*	*58*	*2*	*5*	[illegible]	....	[illegible]	....
[illegible]	*Plandome, village*	*1*	....	*1*	....	....	[illegible]	....	....	....	....	*5*	....
[illegible]	**[illegible] Neck Estates, village*	....	....	....	....	....	....	....	....	....	....	....	....
[illegible]	**[illegible], village*	....	....	....	....	....	....	....	....	....	....	....	....
[illegible]	*[illegible], village*	....	....	*9*	....	....	....	....	....	....	....	[illegible]	1
[illegible]	Oyster Bay	531	7	173	16	3	[illegible]	3	....	[illegible]	....	....	....
[illegible]	*Farmingdale, village*	[illegible]	*2*	[illegible]	*4*	....	[illegible]	....	....	....	....	....	....
[illegible]	*[illegible], village*	[illegible]	....	[illegible]	*1*	*2*	[illegible]	....	[illegible]	*5*	....	....	....
[illegible]	*Bayville, village*	*3*	*1*	*4*	....	....	[illegible]	....	....	....	....	....	....
[illegible]	*Malverne, village*	*2*	....	[illegible]	*1*	*1*	*4*	....	....	*2*	[illegible]	[illegible]	....
31	NIAGARA COUNTY	2,442	103	1,485	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
01	Lockport, city	441	[illegible]	[illegible]	41	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
02	Niagara Falls, city	1,[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5	[illegible]	[illegible]	[illegible]	....
03	North Tonawanda, city	[illegible]	12	[illegible]	34	15	[illegible]	[illegible]	[illegible]	[illegible]	....	[illegible]	....
50	Cambria	[illegible]	1	19	5	....	[illegible]	....	....	[illegible]	....	5	....

* These villages do not, as yet, report separately

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary, and acute miliary 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	....	....	....	...	....	....	....	....	....	....	1	....	13	27
....	1	....	1	....	...	....	....	....	....	....	....	....	....	20	65
33	1	4	....	....	...	3	2	....	....	....	1	....	1	9	66
30	3	6	1	....	...	1	2	....	....	1	....	4	....	40	28
1	....	8	....	....	...	2	2	....	....	3	....	4	....	34	67
....	....	1	....	....	...	....	....	....	....	....	....	....	2	7	29
7	....	1	....	....	...	1	1	....	....	....	....	....	....	8	68
11	....	....	....	....	...	....	....	....	....	....	....	3	....	7	30
....	....	....	....	1	...	....	17	....	...	5	2	4	....	118	10
193	1	122	5	79	3	69	42	8	6	18	25	56	19	580	28
82	....	104	5	37	2	32	19	4	3	10	16	32	14	314	01
....	....	2	....	2	...	3	8	....	....	....	....	1	2	23	50
1	1	....	....	....	...	....	2	....	1	....	....	....	....	6	20
....	....	....	....	....	...	....	....	....	....	....	1	1	....	8	21
1	....	1	....	....	...	....	....	....	....	....	....	....	....	20	51
5	....	1	....	2	...	1	....	....	....	1	....	3	....	29	22
18	....	....	....	....	...	....	....	....	....	....	11	....	....	6	52
2	....	....	....	....	...	1	3	....	....	1	....	2	....	10	53
24	....	....	....	8	...	3	1	1	....	....	....	1	....	14	54
9	....	....	....	18	...	2	1	....	....	....	1	1	....	8	23
9	....	1	....	....	...	6	1	....	....	....	....	1	....	16	55
13	....	2	....	....	1	5	....	1	2	1	....	4	....	35	24
1	....	....	....	11	...	1	3	1	....	....	1	....	1	10	56
....	....	1	....	....	...	2	....	....	....	2	....	1	....	11	25
7	....	....	....	....	...	1	....	....	....	1	....	2	....	14	57
....	....	....	....	....	...	....	....	....	....	....	....	1	....	6	26
....	....	....	....	1	...	2	....	....	....	....	....	1	....	4	27
9	....	....	....	....	...	1	....	1	....	1	1	2	1	16	58
2	....	1	....	....	...	2	....	....	....	....	....	....	1	9	59
10	....	9	....	....	...	7	4	....	....	1	5	5	....	21	28
307	10	172	[illegible]	16	10	116	81	11	16	34	6	122	44	1,013	29
....	1	8	.	4	3	16	1	[illegible]	....	.	[illegible]	[illegible]	[illegible]	52	01
98	4	50	4	4	1	37	19	5	7	6	19	37	14	274	50
....	....	....	....	....	...	....	....	....	1	....	....	3	....	11	20
19	....	4	....	....	...	2	2	....	....	2	....	5	....	15	21
8	1	10	....	....	...	7	4	....	....	2	....	11	3	75	22
1	....	6	1	3	1	5	2	1	....	1	1	4	2	35	23
....	....	....	....	....	...	....	....	....	....	....	....	2	....	12	24
6	....	28	1	1	...	6	2	1	....	1	5	5	....	65	25
6	....	....	....	....	...	....	....	....	....	1	....	2	....	15	29
4	....	6	....	1	1	6	2	....	....	1	3	3	1	46	30
3	....	3	....	....	...	....	....	....	....	....	....	1	1	6	31
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	36
....	....	....	....	....	...	....	....	....	....	1	....	3	....	16	37
94	2	42	1	....	3	25	9	8	2	9	4	16	10	129	51
2	....	1	1	1	...	1	1	....	3	5	13	9	4	107	26
6	....	....	....	....	...	....	....	....	....	....	....	....	....	1	32
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	*33
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	*34
....	....	....	....	....	...	....	....	....	....	....	....	1	....	1	35
52	2	18	....	4	1	15	36	1	1	4	6	10	4	108	52
....	....	....	....	....	...	....	....	....	1	....	2	3	....	14	27
8	....	....	....	....	...	....	1	1	....	....	1	1	1	21	28
....	....	....	....	....	...	....	1	....	....	....	....	....	....	3	34
....	....	1	....	....	...	2	1	....	1	....	....	....	1	3	39
304	10	632	46	29	8	178	84	23	13	45	50	116	82	1,006	31
79	2	91	7	....	1	38	13	1	1	6	8	18	12	213	01
101	5	309	25	6	4	57	18	9	10	25	26	50	55	374	02
41	1	148	10	21	1	44	10	7	....	3	4	29	4	126	03
....	....	2	....	....	...	1	....	....	....	1	1	....	....	17	50

their deaths being included with town in which located.

Table 39 — State of New York (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	NIAGARA Co.— (*Concluded*)												
51	Hartland	63	4	22	3	1	17	2	....	32	....	8	....
20	*Middleport, village (58)*	*21*	.....	*15*	.....	.....	*11*	*2*	....	*4*	....	*5*	....
52	Lewiston	51	1	25	3	1	14	1	....	3	....	9	....
21	*Lewiston, village*	*7*	.....	*6*	*2*	.....	*3*	....	....	.....	....	*4*	....
53	Lockport	34	.....	98	2	3	38	....	....	6	....	10	....
54	Newfane	60	1	40	5	1	17	....	....	24	....	28	....
55	Niagara	6	.....	1	.....	.....	.....	....	....	.....	....	....	....
22	*La Salle, village*	*94*	*2*	*27*	*3*	*4*	*10*	*1*	....	*4*	....	*33*	*2*
56	Pendleton	18	.....	15	3	.....	6	....	....	16	....	3	....
57	Porter	22	.....	15	4	.....	7	....	....	.....	....	14	....
23	*Youngstown, village*	*13*	.....	*10*	*2*	.....	*2*	*1*	....	*4*	....	*4*	....
58	Royalton (20)	72	4	26	3	.....	17	5	....	13	....	37	....
59	Somerset	33	.....	11	1	.....	9	1	....	3	....	8	....
24	*Barker, village*	*7*	.....	*6*	.....	.....	*2*	....	....	*1*	....	*1*	....
60	Wheatfield	41	.....	18	3	.....	8	1	....	1	....	4	....
61	Wilson	40	2	30	6	1	13	1	....	18	....	12	....
25	*Wilson, village*	*16*	*1*	*10*	*1*	.....	*7*	....	....	*12*	....	*3*	....
32	ONEIDA COUNTY	4,390	187	2,741	383	192	1,212	62	11	2,164	36	270	3
01	Rome, city	702	32	453	50	26	203	4	1	255	7	30	....
02	Utica, city	2,524	95	1,291	223	130	483	2[illegible]	[illegible]	1,035	27	130	1
03	Sherrill, city	25	.....	13	1	2	[illegible]	....	....	2	....	9	....
50	Annsville	17	.....	11	2	.....	7	1	....	3	....	5	....
51	Augusta	11	.....	12	1	1	10	....	....	3	....	5	....
20	*Oriskany Falls, village*	*11*	*1*	*14*	.....	*1*	*10*	....	....	*14*	....	*8*	*1*
52	Ava	21	.....	7	2	.....	5	....	....	5	....	....	....
53	Boonville	20	3	18	1	1	7	....	....	31	....	3	....
21	*Boonville, village*	*20*	.....	*31*	*1*	*1*	*22*	....	....	*6*	....	....	....
54	Bridgewater	11	.....	15	1	.....	11	....	....	1	....	....	....
22	*Bridgewater, village*	.....	.....	5	.....	.....	4	....	....	1	....	....	....
55	Camden	21	2	14	4	.....	10	3	....	1	....	....	....
23	*Camden, village*	*37*	*3*	*33*	*4*	*3*	*17*	*7*	....	*1*	....	....	....
56	Deerfield	18	1	4	1	.....	3	....	....	4	....	2	....
57	Florence	13	1	9	1	.....	5	....	....	.....	....	....	....
58	Floyd	22	1	4	1	1	2	....	....	.....	....	....	....
59	Forestport	7	1	6	.....	.....	2	....	....	6	....	1	....
24	*Forestport, village*	*8*	.....	*7*	*1*	.....	*4*	....	....	*3*	....	....	....
60	Kirkland	55	4	38	3	.....	23	2	....	9	....	3	....
25	*Clinton, village*	*13*	*1*	*23*	*3*	.....	*17*	*1*	*1*	*1*	....	....	....
61	Lee	24	.....	21	4	1	10	....	....	73	....	4	....
62	Marcy	24	1	18	4	1	7	....	....	1	....	1	....
63	Marshall	21	1	14	2	3	7	2	....	30	....	....	....
26	*Waterville, village (67)*	*9*	.....	*18*	*2*	.....	*11*	....	....	*106*	*1*	....	....
64	New Hartford	159	7	87	15	2	40	1	....	220	....	15	1
27	*New Hartford, village*	*19*	*2*	*21*	.....	.....	*9*	*3*	....	*6*	....	*2*	....
65	Paris	44	4	35	5	1	18	1	1	21	....	1	....
28	*Clayville, village*	*17*	*2*	*9*	.....	.....	*6*	....	....	*27*	....	*6*	....
66	Remsen	9	.....	4	1	1	2	....	....	.....	....	....	....
29	*Remsen, village (69)*	*7*	*1*	*2*	.....	.....	*2*	....	....	.....	....	....	....
67	Sangerfield (26)	22	.....	8	1	.....	6	2	....	38	....	....	....
68	Steuben	16	1	3	.....	.....	2	....	....	15	....	....	....
69	Trenton (29)	29	.....	19	3	2	8	4	....	7	....	3	....
30	*Holland Patent, village*	*1*	.....	*3*	.....	.....	*3*	....	....	.....	....	....	....
31	*Prospect, village*	*7*	.....	*4*	.....	.....	*3*	....	....	*3*	....	....	....
32	*Trenton, village*	*6*	.....	*4*	.....	.....	*2*	....	....	*10*	....	....	....
70	Vernon	30	1	25	3	.....	16	....	....	7	....	5	....
33	*Oneida Castle, village*	*4*	*1*	*8*	.....	.....	*8*	....	....	.....	....	*1*	....
34	*Vernon, village*	*4*	*3*	*9*	*1*	.....	*8*	....	....	*4*	....	....	....
71	Verona	52	1	45	5	2	31	....	....	2	....	3	....
35	*New London, village**	.....	.....	.....	.....	.....	.....	....	....	.....	....	....	....
72	Vienna	27	.....	30	1	1	16	1	....	.....	....	3	....
;	*Sylvan Beach, village**	.....	.....	.....	.....	.....	.....	....	....	.....	....	....	....

* Disorganized; included

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —															
Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32–37-a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
19	....	3	....	....	...	1	....	....	....	....	....	....	1	21	51
1	....	*2*	....	....	...	....	....	....	....	....	....	*2*	....	*13*	*20*
4	....	11	....	....	...	4	....	....	....	....	1	1	1	22	52
....	....	....	....	....	...	*1*	....	....	....	*1*	....	*1*	....	*4*	*21*
....	....	12	1	1	...	2	38	....	....	....	1	5	1	52	53
7	....	3	....	....	...	4	....	2	....	2	....	4	....	34	54
3	....	1	....	....	...	....	....	....	....	....	....	1	....	....	55
....	....	*22*	*2*	....	...	*8*	*1*	*2*	....	*1*	*3*	*1*	....	*17*	*22*
....	....	3	1	....	...	5	....	1	....	....	1	....	....	13	56
2	....	1	....	....	...	2	....	....	....	2	....	4	1	8	57
....	....	*2*	....	....	...	....	....	....	....	....	....	....	*1*	*9*	*23*
22	....	9	....	1	2	4	2	....	....	....	....	3	....	19	58
3	....	....	....	....	...	....	....	....	....	....	1	1	....	9	59
4	....	....	....	....	...	*1*	....	....	....	....	*1*	....	....	*5*	*24*
3	....	13	....	....	...	2	1	....	1	....	1	2	1	12	60
8	....	....	....	....	...	2	....	....	1	....	2	2	1	24	61
7	*2*	....	....	....	...	*2*	*1*	*1*	....	....	....	*1*	....	*6*	*25*
460	11	542	59	38	12	217	161	58	23	87	9	247	94	1,907	32
11	....	134	19	....	...	35	42	14	4	6	13	43	18	300	01
183	5	315	32	10	7	104	39	30	13	50	46	135	54	875	02
7	....	6	2	....	...	....	....	....	....	1	....	1	1	8	03
2	1	....	....	1	...	1	1	....	....	....	1	1	....	7	50
2	....	1	....	....	...	....	....	....	....	....	....	1	....	11	51
....	....	....	....	....	...	*2*	*1*	*1*	....	*1*	....	*1*	....	*10*	*20*
1	....	....	....	....	...	1	....	....	....	....	....	....	....	7	52
....	....	....	....	....	...	1	1	....	....	....	2	2	....	13	53
....	....	....	....	....	...	....	....	....	*1*	....	*1*	*3*	*1*	*35*	*21*
6	....	....	....	....	...	....	....	....	....	....	....	1	1	13	54
5	....	....	....	....	...	*2*	....	....	....	....	....	....	....	*5*	*22*
27	1	1	....	1	...	3	....	....	....	1	....	1	1	10	55
71	*2*	....	....	*9*	...	*3*	*1*	1	....	*1*	....	*1*	....	*27*	*23*
....	....	....	....	....	...	1	....	....	....	....	....	1	1	2	56
....	....	....	....	1	...	1	2	....	....	1	....	1	....	5	57
....	....	....	....	....	...	2	....	....	....	....	1	....	1	2	58
23	....	....	....	1	1	2	....	1	....	....	....	1	....	4	59
8	....	....	*1*	....	...	*2*	....	....	....	....	....	....	....	*6*	*24*
11	....	4	....	....	...	3	2	2	....	1	1	2	....	32	60
15	....	*1*	....	....	...	*4*	....	....	....	1	....	*4*	....	*17*	*25*
3	....	....	....	13	1	1	1	....	....	....	....	4	3	12	61
....	....	....	....	....	...	2	2	1	....	2	....	....	....	14	62
8	....	....	....	....	...	1	....	....	....	....	....	1	....	13	63
3	....	....	....	....	...	*3*	....	....	....	*1*	*1*	*1*	....	*14*	*26*
2	....	6	....	....	1	5	7	....	....	1	3	7	1	66	64
10	....	*5*	....	....	...	*3*	*3*	*2*	....	....	....	*2*	....	*16*	*27*
17	....	2	....	....	...	3	2	....	....	1	2	5	1	23	65
10	....	....	....	....	...	*1*	*1*	*1*	....	....	....	*1*	....	*7*	*28*
....	....	1	....	....	...	....	....	....	....	....	....	....	....	4	66
....	....	....	....	....	...	....	....	....	....	....	....	....	....	*2*	*29*
2	....	....	....	....	...	2	1	....	....	1	....	....	....	6	67
....	....	....	....	....	...	....	....	....	....	....	....	....	....	3	68
4	....	3	1	....	...	2	1	....	....	....	2	....	1	14	69
....	....	....	....	....	...	....	....	....	....	....	....	....	....	*3*	*30*
....	....	....	....	....	...	....	....	....	....	....	1	....	....	*3*	*31*
....	....	*1*	....	....	...	....	*1*	....	....	....	*1*	....	....	*2*	*32*
2	....	1	....	....	...	....	1	....	....	1	....	2	....	21	70
....	....	*1*	....	....	...	*1*	....	....	....	....	....	....	....	*8*	*33*
....	....	*2*	....	....	...	....	*1*	....	....	....	*2*	....	1	5	*34*
4	1	....	....	....	1	4	2	1	2	1	1	5	....	32	71
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	**35*
1	1	1	....	....	...	....	1	....	1	....	2	1	....	24	72
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	**36*

in town since 1915.

Table 39 — STATE OF NEW YORK (exclusive of New York City): ***Births, stillbirths, certain important***

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF —			CASES AND					
					Under 1 year	1-4 years	60 years and over	Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
								Cases	Deaths	Cases	Deaths	Cases	Deaths
	ONEIDA CO.— (*Concluded*)												
73	Western	23	2	13	3	....	9	....	....	9	....	....	....
74	Westmoreland	17	....	23	2	....	18	....	....	4	....	3	....
75	Whitestown	136	5	50	15	7	13	....	....	48	1	8	....
37	*Whitesboro, village*	31	1	31	6	1	17	1	....	35	....	11	....
38	*Yorkville, village*	51	3	19	2	....	7	....	....	13	....	1	....
39	*Oriskany, village*	16	1	13	2	....	8	....	....	95	....	1	....
10	Rome State Custodial Asylum	10	1	62	6	2	1	....	....	9	....	6	....
11	Utica State Hospital	1	....	135	....	....	72	....	1	....	....	....	....
33	ONONDAGA COUNTY	5,746	208	3,071	454	147	1,327	196	10	1,451	7	1093	24
01	**Syracuse, city**	4,357	164	2,138	355	111	799	130	7	1,178	6	751	13
50	Camillus	47	3	23	5	1	11	4	1	....	....	4	..
20	*Camillus, village*	9	....	9	....	....	6	....	....	1	....	3	....
51	Cicero	37	....	42	2	....	30	2	1	9	....	5	..
52	Clay	56	1	29	4	1	16	2	....	53	....	10	1
53	DeWitt	96	3	42	10	1	18	2	....	1	....	8	....
21	*East Syracuse, village*	89	7	40	8	3	20	3	..	1	....	16	....
22	*Eastwood, village*	38	1	24	3	1	8	....	....	....	....	6	....
54	Elbridge	30	....	29	5	1	18	....	....	....	....	2	....
23	*Elbridge, village*	4	....	9	....	....	7	....	....	....	....	....	....
24	*Jordan, village*	17	....	16	1	....	14	....	....	....	....	13	....
55	Fabius	20	1	12	....	....	11	....	....	4	..	4	....
25	*Fabius, village*	3	....	6	....	....	4	....	....	....	....	....	....
56	Geddes	28	....	16	4	1	3	1	....	3	....	5	1
26	*Solvay, village*	209	5	61	11	9	19	....	....	3	....	42	7
57	LaFayette	29	....	15	1	1	11	....	....	1	....	9	....
58	Lysander	62	1	30	3	....	21	....	....	34	....	4	....
27	*Baldwinsville, village* (68)	63	3	50	4	2	35	25	....	102	1	28	....
59	Manlius	60	1	37	5	....	19	....	....	3	....	12	....
28	*Fayetteville village*	17	1	19	....	....	16	....	....	....	....	5	....
34	*Minoa, village*	12	....	5	....	....	2	....	....	....	....	....	....
29	*Manlius, village*	28	1	18	4	1	9	....	....	3	....	10	....
60	Marcellus	41	2	16	...	1	12	....	....	4	....	19	1
30	*Marcellus, village*	17	2	17	3	1	10	1	....	....	....	1	1
61	Onondaga	111	8	195	10	4	106	13	1	8	....	52	....
62	Otisco	22	....	6	1	....	5	....	....	....	....	2	....
63	Pompey	26	....	21	2	1	10	1	....	1	....	9	....
64	Salina	58	....	24	3	3	11	1	....	....	....	5	....
31	*Liverpool, village*	22	1	24	....	3	16	3	....	2	....	8	....
65	Skaneateles	62	1	28	6	1	14	6	....	23	....	7	....
32	*Skaneateles, village*	13	....	18	1	....	15	2	....	2	....	2	....
66	Spafford	13	....	6	....	....	5	....	....	1	...	19	....
67	Tully	14	1	12	2	....	5	....	....	....	....	21	....
33	*Tully, village*	6	....	9	....	....	7	....	....	1	....	8	....
68	Van Buren (27)	30	1	23	1	....	14	....	....	13	....	3	....
10	Syracuse Institution for Feeble-minded Children	....	....	2	....	....	....	....	....	....	....	....	....
34	ONTARIO COUNTY	1,154	38	870	93	32	453	21	1	37	....	113	1
01	**Canandaigua, city**	242	4	176	24	9	92	3	....	....	....	12	..
02	Geneva, city	394	15	190	35	11	76	11	1	14	....	45	1
50	Bristol	13	1	12	2	....	5	....	....	....	....	1	....
51	Canadice	9	....	4	....	....	2	....	....	....	....	....	....
52	Canandaigua	29	1	26	2	....	13	....	....	1	....	5	....
53	East Bloomfield	18	1	31	2	1	9	....	....	3	....	....	....
27	*East Bloomfield, village*	4	....	5	1	....	3	....	....	....	....	1	....
28	*Holcomb, village*	5	....	3	....	....	3	....	....	....	....	....	....
54	Farmington	25	1	18	1	1	10	....	....	1	....	8	....
55	Geneva	21	....	25	....	2	11	....	....	....	....	4	....
56	Gorham	18	1	23	1	....	13	....	....	....	....	1	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921 — (Continued)**

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS: Pulmonary and acute miliary, 31, 37e		TUBERCULOSIS: Other forms, 32-37-a, b		PNEUMONIA: Broncho, 100	PNEUMONIA: Lobar and unqualified, 101	Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
10	.....	.....	1	.....	...	.....	.....	.....	.....	....	1	1	....	10	73
5	.....	4	.....	.....	...	1	1	.....	.....	5		1	....	16	74
3	.....	27	2	.....	...	17	3	4	1	8	1	4	5	25	75
3	.....	*8*	*1*	*2*	...	*1*	.....	...	.....	*1*	*2*	*3*	....	*24*	*37*
....	.....	*8*	.....	.....	*1*	*1*	...	.....	.....	....	....	*3*	....	*15*	*38*
....	.....	*2*	.....	.....	...	*2*	*1*	.....	.....	....	*1*	*3*	....	*8*	*39*
1	.....	7	.....	.....	...	.....	29	.....	1	1	2	1	4	24	10
....	.....	1	.....	.....	...	.....	14	.....	.....	1	3	2	....	114	11
696	26	1,292	95	8	6	306	163	29	35	97	118	277	119	2,094	33
391	19	1,017	77	1	1	218	92	18	30	62	95	194	96	1,446	01
....	.....	6	.....	.....	...	1	.....	.....	.....	2	....	1	1	18	50
....	.....	*1*	.....	.....	...	*1*	*1*	.....	.....	....	*2*	*1*	....	*5*	*20*
4	...	9	1	.....	1	2	1	.....	.....	....	4	3	1	30	51
6	1	14	2	.....	...	2	...	.....	.....	1	3	4	1	16	52
6	.....	12	1	.....	...	6	.....	.....	.....	4	....	4	....	33	53
23	*2*	*40*	*1*	.....	...	*3*	.....	*1*	.....	*1*	....	3	....	33	*21*
....	.....	*6*	*1*	.....	...	*1*	.....	.....	.....	*1*	....	*2*	*2*	*18*	*22*
4	.....	.....	.....	.....	...	5	.....	.....	.....	1	....	1	1	26	54
....	.....	.....	.....	.....	...	*2*	.....	.....	.....	....	....	*1*	....	*8*	*23*
4	.....	.....	.....	.....	...	*1*	.....	*1*	.....	....	....	*4*	....	*12*	*24*
15	.....	.....	.....	.....	1	2	.....	.....	.....	....	....	3	....	8	55
....	.....	.....	.....	.....	...	.....	.....	.....	.....	....	*1*	....	....	*5*	*25*
1	1	4	1	.....	...	3	1	.....	.....	....	....	1	....	11	56
2	*1*	*52*	*3*	.....	...	7	*3*	*2*	.....	*4*	*3*	*5*	*2*	*32*	*26*
1	.....	9	1	.....	...	2	.....	.....	.....	1	....	2	1	10	57
5	...	5	.....	.....	1	.....	.....	.....	.....	3	1	5	1	19	58
41	.....	*9*	.....	.....	*1*	*5*	.....	*1*	.....	*1*	....	*8*	*2*	*37*	*27*
35	.....	4	1	.....	1	2	2	.....	.....	1	1	2	2	27	59
37	.....	*6*	*1*	.....	...	.....	.....	*1*	.....	*1*	*1*	*1*	....	*15*	*28*
....	.....	*3*	.....	.....	...	.....	*2*	.....	.....	....	....	....	....	*3*	*34*
20	.....	*12*	*1*	.....	...	*2*	.....	...	.....	*1*	....	*1*	....	*15*	*29*
....	.....	.....	.....	.....	...	1	.....	.....	.....	....	....	1	....	14	60
....	.....	*3*	.....	.....	...	.....	.....	.....	.....	....	....	....	*1*	*15*	*30*
18	1	15	2	.....	...	10	52	2	2	11	2	11	2	111	61
....	.....	12	.....	.....	...	1	.....	.....	.....	....	....	....	1	5	62
....	...	2	.....	.....	...	4	2	.....	.....	....	1	....	1	17	63
2	.....	36	2	.....	...	3	.....	.....	.....	....	2	3	1	16	64
2	.....	*8*	.....	.....	...	*6*	.....	*3*	*3*	*1*	....	*4*	....	*16*	*31*
29	1	4	. .	7	...	6	3	.....	.....	1	....	5	1	17	65
2	.....	*1*	.....	.....	...	*3*	.....	.....	.....	....	....	5	....	*15*	*32*
....	.....	1	.....	.....	...	2	.....	.....	.....	....	....	1	....	5	66
3	.....	.....	.....	.....	...	5	2	.....	.....	....	....	....	1	[illegible]	67
3	.....	.....	.....	.....	...	.....	*1*	.....	.....	....	*1*	....	....	*7*	*33*
15	.....	1	.....	.....	...	.....	.....	.....	.....	....	1	3	....	19	68
27	.....	.....	.....	.....	...	.....	1	.....	.....	....	....	....	....	1	10
249	6	119	7	4	6	59	52	5	3	29	31	82	13	639	34
23	1	16	1	.....	1	9	4	1	.....	[illegible]	[illegible]	18	5	134	01
118	3	55	5	.....	...	23	11	3	2	9	7	18	2	131	02
2	.....	.....	.....	.....	...	2	.....	.....	.....	....	....	3	....	9	50
....	.....	.....	.....	.....	...	.....	.....	.....	.....	....	....	1	....	3	51
....	.....	1	1	.....	...	.....	.....	.....	.....	1	....	....	1	23	52
11	1	.....	.....	.....	...	1	18	.....	.....	....	....	1	....	11	53
11	.....	.....	.....	.....	...	.....	.....	.....	.....	....	....	....	....	5	27
2	.....	.....	.....	.....	...	.....	.....	.....	.....	....	....	....	....	3	28
35	1	1	.....	.....	...	1	1	.....	.....	1	1	3	....	11	54
....	.....	1	.....	.....	...	3	2	.....	.....	....	....	3	....	20	55
....	.....	4	.....	.....	...	.....	.....	.....	.....	....	1	2	....	20	56

Table 39 — STATE OF NEW YORK (exclusive of New York City): ***Births, stillbirths, certain important***

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	ONTARIO CO.—(*Concluded*)												
(*20*)	*Rushville, village (pt.)*	....	....	....	....	....	....	....	....	....	....	....	....
[*20**	*Rushville, village (6156)*	*7*	....	*4*	....	....	*4*	....	....	....	....	....	....
57	Hopewell	12	....	26	1	....	19	....	....	....	....	3	....
58	Manchester	14	....	18	2	2	13	....	....	....	....	1	....
21	*Clifton Springs, village*	*92*	*2*	*103*	*6*	....	*47*	*1*	....	*4*	....	*3*	....
22	*Manchester, village*	*37*	*2*	*11*	*1*	*2*	*4*	....	....	....	....	*15*	....
23	*Shortsville, village*	*9*	....	*12*	*1*	....	*7*	....	....	....	....	*1*	....
59	Naples	24	....	13	1	....	8	....	....	....	....	....	....
24	*Naples, village*	*10*	*1*	*18*	*2*	....	*10*	....	....	....	....	....	....
60	Phelps (21)	33	5	32	2	1	23	2	....	....	....	3	....
25	*Phelps, village*	*7*	....	*26*	*1*	....	*24*	*1*	....	....	....	*1*	....
61	Richmond	24	1	13	1	....	8	....	....	....	....	....	....
62	Seneca	48	1	32	4	1	22	1	....	10	....	7	....
63	South Bristol	9	....	7	....	....	6	....	....	4	....	....	....
64	Victor	23	1	18	2	....	12	1	....	....	....	2	....
26	*Victor, village*	*15*	....	*14*	*1*	*2*	*10*	....	....	....	....	....	....
65	West Bloomfield	19	1	14	....	....	9	1	....	....	....	....	....
35	ORANGE COUNTY	2,480	104	1,801	210	79	814	23	5	768	16	330	8
01	**Middletown, city**	352	26	285	33	23	132	1	....	152	4	59	1
02	**Newburgh, city**	614	28	433	47	14	179	10	1	12	....	54	2
03	**Port Jervis, city**	26[illegible]	20	212	33	10	83	2	1	163	2	35	1
50	Blooming Grove	31	1	22	4	2	10	5	1	1	....	12	....
20	*Washingtonville, village*	*13*	*1*	*8*	*2*	....	*6*	....	....	....	....	....	....
51	Chester	23	....	15	1	....	10	1	....	11	1	1	....
21	*Chester, village*	*28*	....	*9*	....	*1*	*6*	*1*	....	*82*	....	*1*	....
52	Cornwall	34	1	33	4	1	17	....	....	32	....	1	....
22	*Cornwall village*	*7*	....	*16*	....	*2*	*11*	....	*5*	....	....	*5*	....
53	Crawford	23	....	16	2	....	6	....	....	8	....	2	....
54	Deerpark	29	1	24	2	2	8	....	....	6	1	4	....
55	Goshen	42	....	66	7	2	35	3	....	21	....	2	....
23	*Goshen, village*	*77*	*4*	*35*	*5*	....	*11*	....	....	*16*	....	*18*	*1*
56	Greenville	14	1	10	1	1	8	....	....	3	....	....	....
57	Hamptonburg	17	....	13	1	....	8	....	....	12	....	4	....
58	Highlands	55	1	33	4	1	8	....	....	6	....	2	....
24	*Highland Falls, village*	*61*	*3*	*24*	*1*	*1*	*11*	*1*	*1*	7	....	*13*	....
59	Minisink	14	1	8	1	1	5	1	....	....	....	....	....
25	*Unionville, village*	*8*	....	*6*	....	*1*	*2*	....	....	....	....	*1*	*1*
60	Monroe	8	....	4	....	1	2	....	....	....	....	2	....
26	*Monroe, village*	*17*	....	*17*	*4*	....	*7*	....	....	....	....	....	....
30	*Harriman, village*	*12*	*2*	*4*	....	....	*2*	....	....	....	....	....	....
61	Montgomery	58	3	28	4	3	14	....	....	6	....	10	....
27	*Montgomery, village*	*14*	....	*8*	....	*1*	*5*	....	....	*3*	....	*1*	....
28	*Walden, village*	*93*	*3*	*43*	*9*	*2*	*19*	....	....	*9*	....	*22*	....
62	Mt. Hope	26	....	26	1	....	9	....	....	....	....	4	....
63	Newburgh	81	....	45	5	4	22	1	....	....	....	13	....
64	New Windsor	70	5	35	9	2	15	3	1	2	1	2	....
65	Tuxedo	74	1	37	4	1	14	....	....	....	....	5	....
66	Wallkill	31	2	25	4	1	15	....	....	47	....	18	....
67	Warwick	141	5	55	12	3	18	....	....	64	....	12	....
29	*Warwick, village*	*44*	*1*	*45*	*8*	....	*24*	....	....	*86*	....	*7*	....
68	Wawayanda	37	....	14	2	1	8	....	....	19	1	13	1
69	Woodbury	38	....	23	2	1	7	....	....	....	....	7	1
10	Middletown State Hospital	2	....	121	1	....	74	....	....	....	....	....	....
36	ORLEANS COUNTY	637	33	389	46	10	219	16	1	248	....	42	2
50	Albion	21	....	26	3	....	19	....	....	3	....	....	....
20	*Albion, village (54)*	*151*	*7*	*88*	*12*	*2*	*49*	*10*	....	*13*	....	*2*	....
51	Barre	30	2	16	2	1	9	....	....	9	....	....	1

* Rushville, village, located in two counties, Ontario

and deaths by broad age groups, in each registration district; also cases and deaths fro causes: 1921

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		Tuberculosis: Pulmonary and acute miliary, 31, 37c		Tuberculosis: Other forms, 32-37a, b		Pneumonia: Broncho, 100	Pneumonia: Lobar and unqualified, 101	Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	.....	.....	.....	.....	....	.....	.....	.....	.....	....	....	....	....	......	20
....	.....	.....	.....	.....	....	.....	.....	.....	.....	....	....	....	....	4	*201
3	.....	2	.....	.....	....	.....	2	.....	.....	1	....	3	....	20	57
....	.....	1	.....	.....	....	.....	1	.....	.....	2	2	2	....	11	58
1	.....	1	.....	1	2	1	1	.....	1	7	3	14	....	76	21
2	.....	5	.....	.....	....	.....	.....	.....	.....	....	2	....	....	6	22
11	.....	1	.....	.....	....	1	4	.....	.....	....	....	....	....	8	23
4	.....	3	.....	.....	....	3	1	.....	.....	....	1	1	1	6	59
2	.....	1	.....	.....	....	2	2	.....	.....	....	2	2	....	11	24
6	.....	8	.....	3	1	3	1	1	.....	....	2	1	1	26	60
3	.....	.....	.....	.....	1	3	2	.....	.....	1	....	3	1	16	25
....	.....	.....	.....	.....	....	1	.....	.....	.....	....	1	....	....	12	61
3	.....	11	.....	.....	....	2	1	.....	.....	2	1	1	....	27	62
....	.....	2	.....	.....	....	.....	.....	.....	.....	....	....	2	....	5	63
2	.....	6	.....	.....	1	1	.....	.....	.....	....	....	2	....	15	64
1	.....	.....	.....	.....	....	2	.....	.....	.....	....	....	....	2	12	26
9	.....	.....	.....	.....	....	1	1	.....	.....	....	1	2	....	10	65
274	13	16	1	22	2	157	105	23	18	46	58	14	3	1,32	35
67	6	31	[illegible]	.....	4	19	12	5	2	11	9	2	7	206	01
26	1	4	3	.....	..	36	3	6	7	12	15	4	7	30	02
36	1	1	2	.....	[illegible]	20	[illegible]	5	1	[illegible]	2	16	10	16	03
3	2	.....	.....	.....	....	1	.....	.....	1	1	2	1	....	14	50
....	1	.....	.....	.....	....	2	.....	.....	.....	....	2	....	....	6	20
15	.....	1	.....	.....	....	5	1	.....	.....	....	....	1	....	12	51
8	.....	.....	.....	11	....	3	1	.....	.....	....	....	....	....	8	21
....	.....	5	1	2	1	3	.....	1	.....	....	1	3	....	27	52
3	.....	1	.....	5	1	1	2	.....	.....	....	....	3	1	12	22
7	.....	2	.....	.....	1	1	1	1	.....	....	1	2	....	11	53
9	.....	.....	.....	.....	2	1	3	.....	.....	....	....	3	....	15	54
10	.....	5	.....	.....	....	2	2	.....	.....	1	....	10	2	52	55
37	.....	5	.....	.....	....	7	2	2	.....	....	1	4	2	25	23
....	.....	.....	.....	.....	....	.....	.....	.....	.....	1	....	1	1	7	56
2	.....	.....	.....	.....	....	1	.....	.....	.....	....	....	1	....	12	57
11	.....	1	.....	.....	....	2	1	.....	.....	....	1	1	....	30	58
....	.....	11	1	.....	....	4	1	.....	.....	2	....	2	....	17	24
4	1	2	1	.....	....	1	1	.....	.....	....	1	....	....	4	59
....	.....	.....	.....	.....	....	.....	.....	.....	.....	....	....	1	....	4	25
....	.....	1	.....	.....	....	.....	.....	.....	.....	....	....	....	....	4	60
....	.....	.....	.....	.....	....	.....	.....	.....	1	2	....	1	1	12	26
1	.....	.....	.....	.....	....	.....	.....	.....	.....	....	....	....	....	4	30
6	.....	.....	.....	.....	....	1	2	.....	.....	2	....	1	....	22	61
5	.....	.....	.....	.....	....	.....	.....	.....	.....	....	....	1	....	7	27
18	.....	3	.....	.....	....	8	1	.....	1	3	1	1	1	35	28
....	.....	.....	.....	.....	....	12	11	1	.....	....	2	....	....	13	62
....	.....	4	.....	.....	....	2	1	.....	1	2	2	3	1	35	63
....	.....	.....	.....	2	1	1	.....	.....	1	1	2	1	....	27	64
....	.....	3	.....	.....	....	1	1	.....	.....	1	3	5	....	27	65
4	.....	6	.....	.....	2	6	1	.....	.....	....	1	2	....	19	66
2	1	12	2	1	1	9	5	3	.....	1	3	5	3	34	67
....	.....	4	.....	1	....	5	3	.....	.....	....	3	3	1	35	29
....	.....	6	.....	.....	....	2	1	1	.....	1	....	1	....	9	68
4	.....	.....	.....	.....	....	1	2	.....	3	....	1	3	....	13	69
....	.....	.....	.....	.....	....	.....	14	.....	.....	2	5	4	....	96	10
68	3	17	1	1	2	28	18	3	2	14	15	29	14	288	36
....	.....	.....	.....	.....	....	.....	2	.....	.....	1	2	2	....	19	50
1	.....	1	.....	.....	....	7	4	1	1	6	2	6	4	65	20
31	1	.....	.....	.....	1	1	.....	.....	.....	1	....	1	....	11	51

and Yates. Total for entire village in bracketed line.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF —			CASES AND					
					Under 1 year	1-4 years	60 years and over	Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
								Cases	Deaths	Cases	Deaths	Cases	Deaths
27	*Churchville, village*	*10*	*1*	*14*	*1*		*9*			*3*			
65	Rush	18		24		1	14	1				5	2
66	Sweden	19	3	14	2		8					9	
28	*Brockport, village*	*47*		*51*	*3*	*2*	*32*					7	
67	Webster	43	1	43	4	1	30	1		3		2	
29	*Webster, village*	*26*		*9*	*1*	*1*	*6*					*6*	
68	Wheatland	29	1	11		1	7	1	1			9	1
30	*Scottsville, village*	*15*		*10*	*2*		*7*					*3*	
10	Rochester State Hospital	5		147			64						
28	MONTGOMERY COUNTY	1,246	31	755	96	25	382	8		277		30	
01	**Amsterdam, city**	821	21	415	70	19	170	6		124		16	
50	Amsterdam	23	1	34	2	2	10					2	
20	*Fort Johnson, village*	*8*	*1*	*10*	*2*		*2*						
21	*Hagaman, village*	*16*		*10*			*7*			*6*			
51	Canajoharie	17		20	2		17			1			
22	*Canajoharie, village*	*40*		*33*	*1*		*26*	*1*		*4*			
52	Charleston	18	1	7			6						
53	Florida	27		17	1		10			7			
54	Glen	13	2	16	1	1	11			1			
23	*Fultonville, village*	*17*		*11*			*9*						
55	Minden	28	2	18	1		15			4			
24	*Fort Plain, village*	*36*		*43*	*2*	*1*	*31*			*7*		*2*	
56	Mohawk	13		15	2		9			7			
25	*Fonda, village*	*22*	*1*	*14*	*4*		*9*			*8*			
57	Palatine	24		17		1	9			30			
26	*Nelliston, village*	*13*		*7*			*6*			*16*			
27	*Palatine Bridge, village*	*9*		*5*			*3*			*1*			
58	Root	24	1	21	1	1	15			1		4	
59	St. Johnsville	18		10	2		4			24		1	
28	*St. Johnsville, village*	*63*	*1*	*32*	*5*		*13*	*1*		*36*		*5*	
29	NASSAU COUNTY	2,851	94	1,413	191	61	612	18	5	441	5	291	2
01	**Glen Cove, city**	244	3	78	13	7	30	1		20	2	3	
50	Hempstead	812	24	388	60	15	176	6	1	39		120	
20	*East Rockaway, village*	*41*		*15*	*3*		*8*						
21	*Floral Park, village (51)*	*43*		*22*	*1*	*1*	*8*	*1*		*5*		*2*	
22	*Freeport, village*	*134*	*9*	*99*	*9*	*6*	*60*	*2*		*2*		*20*	
23	*Hempstead, village*	*102*	*5*	*50*	*7*	*1*	*24*			*1*		*32*	
24	*Lawrence, village*	*17*		*14*	*1*		*7*						
25	*Rockville Center, village*	*166*	*8*	*79*	*13*	*1*	*38*			*1*		*14*	
29	*Cedarhurst, village*	*43*	*1*	*16*	*1*		*10*			*2*		*20*	
30	*Lynbrook, village*	*86*	*1*	*57*	*4*	*2*	*35*			*36*		*19*	
31	*Long Beach, village*	*8*		*8*	*3*		*2*			*2*			
36	**Woodsburgh, village*									*1*		*4*	
37	Garden City	14	1	20	1		12						
51	North Hempstead (21)	470	14	188	42	14	60	3		198	2	35	1
26	*Mineola, village*	*257*	*18*	*146*	*11*	*6*	*38*	*2*	*3*	*1*		*1*	
32	*Plandome, village*	*1*		*1*			*1*					*3*	
33	**Great Neck Estate, village*												
34	**Saddle Rock, village*												
35	*Sands Point, village*			*2*									
52	Oyster Bay	331	7	173	16	5	75	3		128		17	1
27	*Farmingdale, village*	*44*	*2*	*20*	*4*		*9*						
28	*Sea Cliff, village*	*31*		*26*	*1*	*2*	*14*		*1*	*3*			
38	Bayville, village	5	1	4			1						
39	Malverne, village	2		7	1	1	4			2	1	1	
31	NIAGARA COUNTY	2,942	103	1,485	262	96	545	77	9	667	10	850	12
01	**Lockport, city**	441	21	286	41	6	140	23	1	295	2	69	
02	**Niagara Falls, city**	1,500	54	623	141	66	158	13	5	115	8	577	10
03	**North Tonawanda, city**	376	12	182	34	13	55	26	3	113		16	
50	Cambria	27	1	19	5		11			3		5	

* These villages do not, as yet, report separately

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

Deaths from —															
Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary, and acute miliary 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*13*	*27*
....	1	....	1	....	....	....	....	....	....	....	....	....	....	20	65
33	1	4	....	....	....	3	2	....	....	....	1	....	1	9	66
30	*3*	*6*	*1*	....	....	*1*	*2*	....	....	*1*	....	*4*	....	*40*	*28*
1	....	8	....	....	....	2	2	....	....	3	....	4	....	34	67
....	....	*1*	....	....	....	....	....	....	....	....	....	....	*2*	*7*	*29*
7	....	1	....	....	....	1	1	....	....	....	....	....	....	8	68
11	....	....	....	....	....	....	....	....	....	....	....	*3*	....	*7*	*30*
....	....	....	....	1	....	....	17	....	....	5	2	4	....	118	10
193	1	122	5	79	3	69	42	6	6	18	25	56	19	586	28
82	....	104	5	37	2	32	15	4	3	10	16	32	14	314	01
....	....	2	....	2	....	3	8	....	....	....	....	1	2	23	50
1	*1*	....	....	....	....	....	*2*	....	*1*	....	....	....	....	*6*	*20*
....	....	....	....	....	....	....	....	....	....	....	*1*	*1*	....	*8*	*21*
1	....	1	....	....	....	....	....	....	....	....	....	....	....	20	51
5	....	*1*	....	*2*	....	*1*	....	....	....	*1*	....	*3*	....	*29*	*22*
18	....	....	....	....	....	....	....	....	....	....	1	....	....	6	52
2	....	....	....	....	....	1	3	....	....	1	....	2	....	10	53
24	....	....	....	8	....	3	1	1	....	....	....	1	....	14	54
9	....	....	....	*18*	....	*2*	*1*	....	....	....	*1*	*1*	....	*8*	*23*
9	....	1	....	....	....	6	1	....	....	....	....	1	....	16	55
13	....	*2*	....	....	*1*	*5*	....	*1*	*2*	*1*	....	*4*	....	*35*	*24*
1	....	....	....	11	....	1	3	1	....	....	1	....	1	10	56
....	....	*1*	....	....	....	*2*	....	....	....	*2*	....	*1*	....	*11*	*25*
7	....	....	....	....	....	1	....	....	....	1	....	2	....	14	57
....	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*6*	*26*
....	....	....	....	*1*	....	*2*	....	....	....	....	....	*1*	....	*4*	*27*
9	....	....	....	....	....	1	....	1	....	1	1	2	1	16	58
2	....	1	....	....	....	2	....	....	....	....	....	....	1	9	59
10	....	*9*	....	....	....	*7*	*4*	....	....	*1*	*5*	*5*	....	*21*	*28*
307	10	172	9	16	10	116	81	11	16	34	6	122	44	1,013	29
....	1	8	[illegible]	4	3	16	1	[illegible]	....	[illegible]	[illegible]	[illegible]	[illegible]	52	01
98	4	50	4	4	1	37	19	5	7	8	19	37	14	274	50
....	....	....	....	....	....	....	....	....	*1*	....	....	*3*	....	*11*	*20*
19	....	*4*	....	....	....	*2*	*2*	....	....	*2*	....	*5*	....	*15*	*21*
8	*1*	*10*	....	....	....	*7*	*4*	....	....	*2*	....	*11*	*3*	*75*	*22*
1	....	*6*	*1*	*3*	*1*	*5*	*2*	*1*	....	*1*	*1*	*4*	*2*	*35*	*23*
....	....	....	....	....	....	....	....	....	....	....	....	*2*	....	*12*	*24*
6	....	*28*	*1*	*1*	....	*6*	*2*	*1*	....	*1*	*5*	*5*	....	*65*	*25*
6	....	....	....	....	....	....	....	....	....	*1*	....	*2*	....	*15*	*29*
4	....	*6*	....	*1*	*1*	*6*	*2*	....	....	*1*	*3*	*3*	*1*	*46*	*30*
3	....	*3*	....	....	....	....	....	....	....	....	....	*1*	*1*	*6*	*31*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*36*
....	....	....	....	....	....	....	....	....	....	1	....	3	....	16	37
94	2	42	1	....	3	25	9	8	2	9	4	16	10	129	51
2	....	*1*	*1*	*1*	....	*1*	*1*	....	*3*	*6*	*13*	*9*	*4*	*107*	*26*
6	....	....	....	....	....	....	....	....	....	....	....	....	....	*1*	*32*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	**33*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	**34*
....	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*1*	*35*
52	2	13	....	4	1	15	36	1	1	4	6	10	4	108	52
....	....	....	....	....	....	....	....	....	*1*	....	*2*	*3*	....	*14*	*27*
8	....	....	....	....	....	....	*1*	*1*	....	....	*1*	*1*	*1*	*21*	*28*
....	....	....	....	....	....	....	1	....	....	....	....	....	....	3	38
....	....	1	....	....	....	2	1	....	1	....	....	....	1	3	39
304	10	632	46	29	8	178	84	23	13	45	50	116	82	1,006	31
79	2	91	7	....	1	36	15	1	1	6	8	18	12	21[illegible]	01
101	5	309	25	6	4	57	18	9	10	2[illegible]	26	50	59	574	02
41	1	148	10	21	1	44	10	7	....	3	4	20	4	12[illegible]	03
....	....	2	....	....	....	1	....	....	....	1	1	....	....	17	50

their deaths being included with town in which located.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	NIAGARA Co. — (*Concluded*)												
51	Hartland	63	4	22	3	1	17	2	....	32		8	
20	*Middleport, village* (*58*)	*21*	.....	*15*	....	....	*11*	*2*	....	*4*	....	*5*	....
52	Lewiston	51	1	25	3	1	14	1	....	3	....	9	....
21	*Lewiston, village*	*7*	.....	*6*	*2*	....	*3*	....	....	....	....	*4*	....
53	Lockport	34	.....	98	2	3	38	....	....	6	....	10	....
54	Newfane	60	1	40	5	1	17	....	....	24	....	28	....
55	Niagara	6	.....	1	....	....	....	....	....	....	....	....	....
22	*La Salle, village*	*94*	*2*	*27*	*3*	*4*	*10*	*1*	....	*4*	....	*33*	*2*
56	Pendleton	18	.....	15	3	....	6	....	....	16	....	3	....
57	Porter	22	.....	15	4	....	7	....	....	....	....	14	....
23	*Youngstown, village*	*13*	.....	*10*	*2*	....	*2*	*1*	....	*4*	....	*4*	....
58	Royalton (20)	72	4	26	3	....	17	5	....	13	....	37	....
59	Somerset	33	.....	11	1	....	9	1	....	3	....	8	....
24	*Barker, village*	*7*	.....	*6*	....	....	*2*	....	....	*1*	....	*1*	....
60	Wheatfield	41	.....	18	3	....	8	1	....	1	....	4	....
61	Wilson	40	2	30	6	1	13	1	....	18	....	12	....
25	*Wilson, village*	*16*	*1*	*10*	*1*	....	7	....	....	*12*	....	*3*	....
32	ONEIDA COUNTY	4,390	187	2,741	383	192	1,212	62	11	2,164	36	270	3
01	Rome, city	702	32	453	50	26	203	4	1	255	7	30	....
02	Utica, city	2,524	99	1,291	223	130	483	2[illegible]	7	1,035	27	130	1
03	Sherrill, city	25	.....	13	1	2	7	....	....	2	....	9	....
50	Annsville	17	.....	11	2	....	7	1	....	3	....	5	....
51	Augusta	11	.....	12	1	1	10	....	....	3	....	5	....
20	*Oriskany Falls, village*	*11*	*1*	*14*	....	*1*	*10*	....	....	*14*	....	*8*	*1*
52	Ava	21	.....	7	2	....	5	....	....	5	....	....	....
53	Boonville	29	3	18	1	1	7	....	....	31	....	3	....
21	*Boonville, village*	*29*	.....	*31*	*1*	*1*	*22*	....	....	*6*	....	....	....
54	Bridgewater	11	.....	15	1	....	11	....	....	1	....	....	....
22	*Bridgewater, village*	.....	.....	5	....	....	4	....	....	1	....	....	....
55	Camden	21	2	14	4	....	10	3	....	1	....	....	....
23	*Camden, village*	*37*	*3*	*33*	*4*	*3*	*17*	*7*	....	*1*	....	....	....
56	Deerfield	18	1	4	1	....	3	....	....	4	....	2	....
57	Florence	13	1	9	1	....	5	....	....	....	....	....	....
58	Floyd	22	1	4	1	1	2	....	....	....	....	....	....
59	Forestport	7	1	6	....	....	2	....	....	6	....	1	....
24	*Forestport, village*	*8*	.....	*7*	*1*	....	*4*	....	....	*3*	....	....	....
60	Kirkland	55	4	38	3	....	23	2	....	9	....	3	....
25	*Clinton, village*	*13*	*1*	*23*	*3*	....	*17*	*1*	*1*	*1*	....	....	....
61	Lee	24	.....	21	4	1	10	....	....	73	....	4	....
62	Marcy	24	1	18	4	1	7	....	....	1	....	1	....
63	Marshall	21	1	14	2	3	7	2	....	30	....	....	....
26	*Waterville, village* (*67*)	*9*	.....	18	*2*	....	11	....	....	*106*	*1*	....	....
64	New Hartford	159	7	87	15	2	40	1	....	220	....	15	1
27	*New Hartford, village*	*19*	*2*	*21*	....	....	*9*	*3*	....	*6*	....	*2*	....
65	Paris	44	4	35	5	1	18	1	1	21	....	1	....
28	*Clayville, village*	*17*	*2*	*9*	....	....	*6*	....	....	*27*	....	*6*	....
66	Remsen	9	.....	4	1	1	2	....	....	....	....	....	....
29	*Remsen, village* (*69*)	*7*	*1*	*2*	....	....	*2*	....	....	....	....	....	....
67	Sangerfield (26)	22	.....	8	1	....	6	2	....	38	....	....	....
68	Steuben	16	1	3	....	....	2	....	....	15	....	....	....
69	Trenton (29)	29	.....	19	3	2	8	4	....	7	....	3	....
30	*Holland Patent, village*	*1*	.....	*3*	....	....	*3*	....	....	....	....	....	....
31	*Prospect, village*	*7*	.....	*4*	....	....	*3*	....	....	*3*	....	....	....
32	*Trenton, village*	*6*	.....	*4*	....	....	*2*	....	....	*10*	....	....	....
70	Vernon	30	1	25	3	....	16	....	....	7	....	5	....
33	*Oneida Castle, village*	*4*	*1*	*8*	....	....	*8*	....	....	....	....	*1*	....
34	*Vernon, village*	*4*	*3*	*9*	*1*	....	*8*	....	....	*4*	....	....	....
71	Verona	52	1	45	5	2	31	....	....	2	....	3	....
35	*New London, village**	.....	.....	.....	....	....	....	....	....	....	....	....	....
72	Vienna	27	.....	30	1	1	16	1	....	....	....	3	....
[illegible]	*Sylvan Beach, village**	.....	.....	.....	....	....	....	....	....	....	....	....	....

* Disorganized; included

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32–37-a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
19		3				1							1	21	51
1		*2*										*2*		*13*	*20*
4		11				4					1	1	1	22	52
						1				*1*		*1*		*4*	*21*
		12	1	1		2	38				1	5	1	52	53
7		3				4		2		2		4		34	54
8		1										1			55
		22	*2*			*8*	*1*	*2*		*1*	*3*	*1*		*17*	*22*
		3	1			5		1			1			13	56
2		1				2				2		4	1	8	57
		2											*1*	*9*	*23*
22		9		1	2	4	2					3		19	58
3											1	1		9	59
4						*1*					*1*			*5*	*24*
3		13				2	1		1		1	2	1	12	69
8						2			1		2	2	1	24	61
7	*2*					*2*	*1*	*1*				*1*		*6*	*20*
460	11	542	59	36	12	217	161	58	23	87	9	247	94	1,907	32
11		134	19			35	42	14	4	6	13	43	18	300	01
183	5	315	32	10	7	104	39	30	13	50	46	135	54	875	02
7		6	2							1		1	1	8	03
2	1			1		1	1				1	1		7	50
2		1										1		11	51
						2	*1*	*1*		*1*		*1*		*10*	*20*
1						1								7	52
						1	1				2	2		13	53
									1		*1*	*3*	*1*	*26*	*21*
6												1	1	13	54
5						*2*								*5*	*22*
27	1	1		1		3				1		1	1	10	55
71	*2*			*9*		*3*	*1*	1		*1*		*1*		*27*	*23*
						1						1	1	2	56
				1		1	2			1		1		5	57
						2					1		1	2	58
23				1	1	2		1				1		4	59
8			*1*			*2*								*6*	*24*
11		4				3	2	2		1	1	2		32	60
15		*1*				*4*				1		*4*		*17*	*25*
3				13	1	1	1					4	3	12	61
						2	2	1		2				14	62
8						1						1		13	63
3						*3*				*1*	*1*	*1*		*14*	*26*
2		6			1	5	7			1	3	7	1	66	64
10		*5*				*3*	*3*	*2*				*2*		*16*	*27*
17		2				3	2			1	2	5	1	23	65
10						*1*	*1*	*1*				*1*		*7*	*28*
		1												4	66
														2	*29*
2						2	1			1				6	67
														3	68
4		3	1			2	1				2		1	14	69
														3	*30*
											1			*3*	*31*
		1					*1*				*1*			*2*	*32*
2		1					1			1		2		21	70
		1				*1*								*8*	*33*
		2					*1*				*2*		1	5	*34*
4	1				1	4	2	1	2	1	1	5		32	71
															*35
1	1	1					1		1		2	1		24	72
															*36

in town since 1915.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF —			CASES AND					
					Under 1 year	1-4 years	60 years and over	Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
								Cases	Deaths	Cases	Deaths	Cases	Deaths
	ONEIDA CO.— (*Concluded*)												
73	Western	23	2	13	3	....	9	....	....	9	....	....	....
74	**Westmoreland**	17	....	23	2	....	18	....	....	4	....	3	....
75	**Whitestown**	136	5	50	15	7	13	....	....	48	1	8	....
37	*Whitesboro, village*	31	1	31	6	1	17	1	....	35	....	11	....
38	*Yorkville, village*	51	3	19	2	....	7	....	....	13	....	1	....
39	*Oriskany, village*	16	1	13	2	....	8	....	....	95	....	1	....
10	Rome State Custodial Asylum	10	1	62	6	2	1	....	....	9	....	6	....
11	Utica State Hospital	1	....	135	....	....	72	....	1	....	....	....	....
33	ONONDAGA COUNTY	5,746	208	3,071	454	147	1,327	196	10	1,451	7	1093	24
01	**Syracuse, city**	4,357	164	2,138	355	111	799	130	7	1,178	6	751	13
50	Camillus	47	3	23	5	1	11	4	1	....	....	4	..
20	*Camillus, village*	9	....	9	....	....	6	....	....	1	....	3	....
51	Cicero	37	....	42	2	....	30	2	1	9	....	5	..
52	Clay	56	1	29	4	1	16	2	....	53	....	10	1
53	DeWitt	96	3	42	10	1	18	2	....	1	....	8	....
21	*East Syracuse, village*	89	7	40	8	3	20	3	..	1	....	16	....
22	*Eastwood, village*	38	1	24	3	1	8	....	....	....	....	6	....
54	Elbridge	30	....	29	5	1	18	....	....	....	....	2	....
23	*Elbridge, village*	4	....	9	....	....	7	....	....	....	....	....	....
24	*Jordan, village*	17	....	16	1	....	14	....	....	....	....	13	....
55	Fabius	20	1	12	....	....	11	....	....	4	..	4	....
25	*Fabius, village*	3	....	6	....	....	4	....	....	....	....	....	....
56	Geddes	28	....	16	4	1	3	1	....	3	....	5	1
26	*Solvay, village*	209	5	61	11	9	19	....	....	3	....	42	7
57	LaFayette	29	....	15	1	1	11	....	....	1	....	9	....
58	Lysander	62	1	30	3	....	21	....	....	34	....	4	....
27	*Baldwinsville, village* (68)	63	3	50	4	2	35	25	....	103	1	28	....
59	Manlius	60	1	37	5	....	19	....	....	3	....	12	....
28	*Fayetteville village*	17	1	19	....	....	16	....	....	....	....	5	....
34	*Minoa, village*	12	....	5	....	....	2	....	....	....	....	....	....
29	*Manlius, village*	28	1	18	4	1	9	....	....	3	....	10	....
60	Marcellus	41	2	16	...	1	12	....	....	4	....	19	1
30	*Marcellus, village*	17	2	17	3	1	10	1	....	....	....	1	1
61	Onondaga	111	8	195	10	4	106	13	1	8	....	52	....
62	Otisco	22	....	6	1	....	5	....	....	....	....	2	....
63	Pompey	26	....	21	2	1	10	1	....	1	....	9	....
64	Salina	58	....	24	3	3	11	1	....	....	....	5	....
31	*Liverpool, village*	22	1	24	....	3	16	3	....	2	....	8	....
65	Skaneateles	62	1	28	6	1	14	6	....	23	....	7	....
32	*Skaneateles, village*	13	....	18	1	....	15	2	....	2	....	2	....
66	Spafford	13	....	6	....	....	5	....	....	1	....	19	....
67	Tully	14	1	12	2	....	5	....	....	....	....	21	....
33	*Tully, village*	6	....	9	....	....	7	....	....	1	....	8	....
68	Van Buren (27)	30	1	23	1	....	14	....	....	13	....	3	....
10	Syracuse Institution for Feeble-minded Children	....	....	2	....	....	....	....	....	....	....	....	....
34	ONTARIO COUNTY	1,154	38	870	93	32	457	21	1	37	....	113	1
01	**Canandaigua, city**	242	4	176	24	9	92	3	....	....	....	12	....
02	Geneva, city	394	15	190	35	11	76	11	1	14	....	45	1
50	Bristol	13	1	12	2	....	5	....	....	....	....	1	....
51	Canadice	9	....	4	....	....	2	....	....	....	....	....	....
52	Canandaigua	29	1	26	2	....	13	....	....	1	....	5	....
53	East Bloomfield	18	1	31	2	1	9	....	....	3	....	....	....
27	*East Bloomfield, village*	4	....	5	1	....	3	....	....	....	....	1	....
28	*Holcomb, village*	5	....	3	....	....	3	....	....	....	....	....	....
54	Farmington	25	1	18	1	1	10	....	....	1	....	8	....
55	Geneva	21	....	25	....	2	11	....	....	....	....	4	....
56	Gorham	18	1	23	1	....	13	....	....	....	....	1	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS: Pulmonary and acute miliary, 31, 37c		TUBERCULOSIS: Other forms, 32–37-a, b		PNEUMONIA: Broncho, 100	PNEUMONIA: Lobar and unqualified, 101	Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
10	....	....	1	....	....	....	....	....	....	....	1	1	....	10	73
5	....	4	....	....	....	1	1	....	....	5		1	....	16	74
3	....	27	2	....	....	17	3	4	1	8	1	4	5	25	75
3	....	8	1	2	....	1	....	....	....	1	2	3	....	24	37
....	....	8	....	....	1	1	....	....	....	....	....	3	....	15	38
....	....	2	....	....	....	2	1	....	....	....	1	3	....	8	39
1	....	7	....	....	....	....	29	....	1	1	2	1	4	24	10
....	....	1	....	....	....	....	14	....	....	1	3	2	....	114	11
696	26	1,292	95	8	6	306	163	29	35	97	118	277	119	2,094	33
391	19	1,017	77	1	1	218	92	18	36	62	95	194	96	1,446	01
....	....	6	....	....	....	1	....	....	....	2	....	1	1	18	50
....	....	1	....	....	....	1	1	....	....	....	2	1	....	5	20
4	....	9	1	....	1	2	1	....	....	....	4	3	1	30	51
6	1	14	2	....	....	2	....	....	....	1	3	4	1	16	52
6	....	12	1	....	....	6	....	....	....	4	....	4	....	33	53
23	2	40	1	....	....	3	....	1	....	1	....	3	....	33	21
....	....	6	1	....	....	1	....	....	....	1	....	2	2	18	22
4	....	....	....	....	....	5	....	....	....	1	....	1	1	26	54
....	....	....	....	....	....	2	....	....	....	....	....	1	....	8	23
4	....	....	....	....	....	1	....	1	....	....	....	4	....	12	24
15	....	....	....	....	1	2	....	....	....	....	....	3	....	8	55
....	....	....	....	....	....	....	....	....	....	....	1	....	....	5	25
1	1	4	1	....	....	3	1	....	....	....	....	1	....	11	56
2	1	52	3	....	....	7	3	2	....	4	3	5	2	32	26
1	....	9	1	....	....	2	....	....	....	1	....	2	1	10	57
5	....	5	....	....	1	....	....	....	....	3	1	5	1	19	58
41	....	9	....	....	1	5	....	1	....	1	....	8	2	37	27
35	....	4	1	....	1	2	2	....	....	1	1	2	2	27	59
37	....	6	1	....	....	....	....	1	....	1	1	1	....	15	28
....	....	3	....	....	....	....	2	....	....	....	....	....	....	3	34
20	....	12	1	....	....	2	....	....	....	1	....	1	....	15	29
....	....	....	....	....	....	1	....	....	....	....	....	1	....	14	60
....	....	3	....	....	....	....	....	....	....	....	....	....	1	15	30
18	1	15	2	....	....	10	52	2	2	11	2	11	2	111	61
....	....	12	....	....	....	1	....	....	....	....	....	....	1	5	62
....	....	2	....	....	....	4	2	....	....	....	1	....	1	17	63
2	....	36	2	....	....	3	....	....	....	....	2	3	1	16	64
2	....	8	....	....	....	6	....	3	3	1	....	4	....	16	31
29	1	4	....	7	....	6	3	....	....	1	....	5	1	17	65
2	....	1	....	....	....	3	....	....	....	....	....	5	....	15	32
....	....	1	....	....	....	2	....	....	....	....	....	1	....	5	66
3	....	....	....	....	....	5	2	....	....	....	....	....	1	[illegible]	67
3	....	....	....	....	....	....	1	....	....	....	1	....	....	7	33
15	....	1	....	....	....	....	....	....	....	....	1	3	....	19	68
27	....	....	....	....	....	....	1	....	....	....	....	....	....	1	10
249	6	119	7	4	6	59	52	5	3	29	31	82	13	639	34
23	1	16	1	....	1	9	4	1	....	5	[illegible]	18	5	134	01
118	3	55	5	....	....	23	11	3	2	9	7	18	2	131	02
2	....	....	....	....	....	2	....	....	....	....	....	3	....	9	50
....	....	....	....	....	....	....	....	....	....	....	....	1	....	3	51
....	....	1	1	....	....	....	....	....	....	1	....	....	1	23	52
11	1	....	....	....	....	1	18	....	....	....	....	1	....	11	53
11	....	....	....	....	....	....	....	....	....	....	....	....	....	5	27
2	....	....	....	....	....	....	....	....	....	....	....	....	....	3	28
35	1	1	....	....	....	1	1	....	....	1	1	3	....	11	54
....	....	1	....	....	....	3	2	....	....	....	....	3	....	20	55
....	....	4	....	....	....	....	....	....	....	....	1	2	....	20	56

Table 39 — STATE OF NEW YORK (exclusive of New York City): ***Births, stillbirths, certain important***

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	DEATHS AT AGE OF — 1-4 years	DEATHS AT AGE OF — 60 years and over	CASES AND — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles, 7 — Cases	Measles, 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
	ONTARIO CO.—(*Concluded*)												
(20)	*Rushville, village (pt.)*	....	....	....	....	....	....	....	....	....	....	....	....
[20*	*Rushville, village (6156)*	7	....	4	....	....	4	....	....	....	....	....	....
57	Hopewell	12	....	26	1	....	19	....	....	....	....	3	....
58	Manchester	14	....	18	2	2	13	....	....	....	....	1	....
21	*Clifton Springs, village*	92	2	105	6	....	47	1	....	4	....	3	....
22	*Manchester, village*	37	2	11	1	2	4	....	....	....	....	15	....
23	*Shortsville, village*	9	....	12	1	....	7	....	....	....	....	1	....
59	Naples	24	....	13	1	....	8	....	....	....	....	....	....
24	*Naples, village*	10	1	18	2	....	10	....	....	....	....	....	....
60	Phelps (21)	33	5	32	2	1	23	2	....	....	....	3	....
25	*Phelps, village*	7	....	26	1	....	24	1	....	....	....	1	....
61	Richmond	24	1	13	1	....	8	....	....	....	....	....	....
62	Seneca	48	1	32	4	1	22	1	....	10	....	7	....
63	South Bristol	9	....	7	....	....	6	....	....	4	....	....	....
64	Victor	23	1	18	2	....	12	1	....	....	....	2	....
26	*Victor, village*	15	....	14	1	2	10	....	....	....	....	....	....
65	West Bloomfield	19	1	14	....	....	9	1	....	....	....	....	....
35	ORANGE COUNTY	2,486	104	1,801	210	79	814	29	5	768	10	330	8
01	**Middletown, city**	352	26	285	33	20	132	1	....	152	4	59	1
02	**Newburgh, city**	614	28	433	47	14	179	10	1	12	....	54	2
03	**Port Jervis, city**	26[illegible]	26	212	3[illegible]	19	83	2	1	163	2	35	1
50	Blooming Grove	31	1	22	4	2	10	5	1	1	....	12	....
20	*Washingtonville, village*	13	1	8	2	....	6	....	....	....	....	....	....
51	Chester	23	....	15	1	....	10	1	....	11	1	1	....
21	*Chester, village*	28	....	9	....	1	6	1	....	82	....	1	....
52	Cornwall	34	1	33	4	1	17	....	....	32	....	1	....
22	*Cornwall village*	[illegible]	....	18	....	2	11	....	5	....	....	5	....
53	Crawford	23	....	16	2	....	[illegible]	....	....	8	....	2	....
54	Deerpark	29	1	24	2	2	8	....	....	6	1	4	....
55	Goshen	42	....	66	7	2	35	3	....	21	....	2	....
23	*Goshen, village*	77	4	35	5	....	11	....	....	16	....	18	1
56	Greenville	14	1	10	1	1	8	....	....	3	....	....	....
57	Hamptonburg	17	....	13	1	....	8	....	....	12	....	4	....
58	Highlands	55	1	33	4	1	8	....	....	6	....	2	....
24	*Highland Falls, village*	61	3	24	1	1	11	1	1	7	....	13	....
59	Minisink	14	1	8	1	1	5	1	....	....	....	....	....
25	*Unionville, village*	8	....	6	....	1	2	....	....	....	....	1	1
60	Monroe	8	....	4	....	1	2	....	....	....	....	2	....
26	*Monroe, village*	17	....	17	4	....	7	....	....	....	....	....	....
30	*Harriman, village*	12	2	4	....	....	2	....	....	....	....	....	....
61	Montgomery	58	3	28	4	3	14	....	....	6	....	10	....
27	*Montgomery, village*	14	....	8	....	1	5	....	....	3	....	1	....
28	*Walden, village*	93	3	43	9	2	19	....	....	9	....	22	....
62	Mt. Hope	26	....	26	1	....	9	....	....	....	....	4	....
63	Newburgh	81	....	45	5	4	22	1	....	....	....	13	....
64	New Windsor	70	5	35	9	2	15	3	1	2	1	2	....
65	Tuxedo	74	1	37	4	1	14	....	....	....	....	5	....
66	Wallkill	31	2	25	4	1	15	....	....	47	....	18	....
67	Warwick	141	5	55	12	3	18	....	....	64	....	12	....
29	*Warwick, village*	44	1	45	8	....	24	....	....	86	....	7	....
68	Wawayanda	37	....	14	2	1	8	....	....	19	1	13	1
69	Woodbury	38	....	23	2	1	7	....	....	....	....	7	1
10	Middletown State Hospital	2	....	121	1	....	74	....	....	....	....	....	....
36	ORLEANS COUNTY	637	33	389	46	10	219	16	1	248	....	42	2
50	Albion	21	....	26	3	....	19	....	....	3	....	....	....
20	*Albion, village (54)*	151	7	88	12	2	49	10	....	13	....	2	....
51	Barre	30	2	16	2	1	9	....	....	9	....	....	1

* Rushville, village, located in two counties, Ontario

and deaths by broad age groups, in each registration district; also cases and deaths fro
causes: **1921**

DEATHS FROM—

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*20*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*4*	*20]
3	....	2	....	....	....	....	2	....	....	1	....	3	....	20	57
....	....	1	....	....	....	....	1	....	....	2	2	2	....	11	58
1	....	*1*	....	*1*	*2*	*1*	*1*	....	*1*	7	*3*	*14*	....	*78*	*21*
2	....	*5*	....	....	....	....	....	....	....	....	*2*	....	....	*8*	*22*
11	....	*1*	....	....	....	*1*	*4*	....	....	....	....	....	....	*8*	*23*
4	....	3	....	....	....	3	1	....	....	....	1	1	1	9	59
2	....	*1*	....	....	....	*2*	*2*	....	....	....	*2*	*2*	....	*12*	*24*
6	....	8	....	3	1	3	1	1	....	....	2	1	1	26	60
3	....	....	....	....	*1*	*3*	*2*	....	....	*1*	....	*3*	*1*	*18*	*25*
....	....	....	....	....	....	1	....	....	....	....	1	....	....	12	61
3	....	11	....	....	....	2	1	....	....	2	1	1	....	27	62
....	....	2	....	....	....	....	....	....	....	....	....	2	....	5	63
2	....	6	....	....	1	1	....	....	....	....	....	2	....	15	64
1	....	....	....	....	....	*2*	....	....	....	....	....	....	*2*	*12*	*26*
9	....	....	....	....	....	1	1	....	....	....	1	2	....	10	65
2[illegible]	13	16	1	22	2	157	109	23	18	46	58	14	3	1,32[illegible]	35
67	6	31	[illegible]	....	[illegible]	19	12	5	2	11	9	2	7	206	01
26	1	4	3	....	....	36	3	6	7	12	15	4	7	30[illegible]	02
36	1	1	2	....	[illegible]	20	[illegible]	3	1	[illegible]	2	16	10	16	03
3	2	....	....	....	....	1	....	....	1	1	2	1	....	14	50
....	*1*	....	....	....	....	*2*	....	....	....	....	*2*	....	....	*6*	*20*
15	....	1	....	....	....	5	1	....	....	....	....	1	....	12	51
8	....	....	....	*11*	....	*3*	*1*	....	....	....	....	....	....	*8*	*21*
....	....	5	1	2	1	3	....	1	....	....	1	3	....	27	52
3	....	*1*	....	*5*	*1*	*1*	*2*	....	....	....	....	*3*	*1*	*12*	*22*
7	....	2	....	....	1	1	1	1	....	....	1	2	....	11	53
9	....	....	....	....	2	1	3	....	....	....	....	3	....	15	54
10	....	5	....	....	....	2	2	....	....	1	....	10	2	52	55
57	....	*5*	....	....	....	*7*	*2*	*2*	....	....	*1*	*4*	*2*	*25*	*23*
....	....	....	....	....	....	....	....	....	....	1	....	1	1	7	56
2	....	....	....	....	....	1	....	....	....	....	....	1	....	12	57
11	....	1	....	....	....	2	1	....	....	....	1	1	....	30	58
....	....	*11*	*1*	....	....	*4*	*1*	....	....	*2*	....	*2*	....	*17*	*24*
4	1	2	1	....	....	1	1	....	....	....	1	....	....	4	59
....	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*4*	*25*
....	....	1	....	....	....	....	....	....	....	....	....	....	....	4	60
....	....	....	....	....	....	....	....	....	*1*	*2*	....	1	1	*12*	*26*
1	....	....	....	....	....	....	....	....	....	....	....	....	....	*4*	*30*
6	....	....	....	....	....	1	2	....	....	2	....	1	....	22	61
3	....	....	....	....	....	....	....	....	....	....	....	*1*	....	7	*27*
18	....	*3*	....	....	....	*8*	*1*	....	*1*	3	*1*	*1*	*1*	*35*	*28*
....	....	....	....	....	....	12	11	1	....	....	2	....	....	13	62
....	....	4	....	....	....	2	1	....	1	2	2	3	1	35	63
....	....	....	....	2	1	1	....	....	1	1	2	1	....	27	64
....	....	3	....	....	....	1	1	....	....	1	3	5	....	27	65
4	....	6	....	....	2	6	1	....	....	....	1	2	....	19	66
2	1	12	2	1	1	9	5	3	....	1	3	5	3	34	67
....	....	*4*	....	*1*	....	*5*	*3*	....	....	....	*3*	*3*	*1*	*35*	*29*
....	....	6	....	....	....	2	1	1	....	1	....	1	....	9	68
4	....	....	....	....	....	1	2	....	3	....	1	3	....	13	69
....	....	....	....	....	....	....	14	....	....	2	5	4	....	96	10
68	3	17	1	1	2	28	18	3	2	14	15	29	14	288	36
....	....	....	....	....	....	....	2	....	....	1	2	2	....	19	50
1	....	*1*	....	....	....	7	4	*1*	*1*	*6*	*2*	*6*	4	*65*	*20*
31	1	....	....	....	1	1	....	....	....	1	....	1	....	11	51

and Yates. Total for entire village in bracketed line.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	DEATHS AT AGE OF — 1-4 years	DEATHS AT AGE OF — 60 years and over	CASES AND — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles, 7 — Cases	Measles, 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
	ORLEANS CO.— (*Concluded*)												
52	Carlton	37	1	20	1		10			11			
53	Clarendon	25		13	4		7	2		10		15	
54	Gaines (20)	29	1	19	3		14			3			
55	Kendall	27	2	14	1		10						
56	Murray	36	3	14	3	1	5	1					
21	*Holley, village*	35	1	19	4	1	6	1				1	1
57	Ridgeway	48	1	38	3		22			12		6	
22	*Medina, village* (58)	126	8	86	8	5	44	1		104		10	
58	Shelby (22)	27	4	21	1		16			3			
59	Yates	36	1	10	1		5			42		8	
23	*Lyndonville, village*	9	2	5			3	1	1	38			
37	OSWEGO COUNTY	1,612	59	1,090	139	26	595	36	3	195	1	26[illegible]	1
01	**Fulton, city**	305	18	179	22	7	98	4	2	5		86	
02	**Oswego, city**	562	14	332	59	7	153	17	1	18		52	
50	Albion	22	1	13	2	1	9	2		25			
20	*Altmar, village*	9		4			4			26			
51	Amboy	10		5			4			1		1	
52	Boylston	13		3			2	1				1	
53	Constantia	21	3	31	5		16	2		3		9	
21	*Cleveland, village*	6		11			10					1	
54	Granby	53	2	32	4	1	12			3		5	1
55	Hannibal	30		18	1		14					19	
22	*Hannibal, village*	3		8			7					7	
56	Hastings	33		18	2		13	1		2		5	
23	*Central Square, village*	9		7		1	4	1		1		2	
57	Mexico	39	3	49	3		32	2		2		4	
24	*Mexico, village*	18	1	20	1	2	15			5		3	
58	New Haven	28		15			13			3		2	
59	Orwell	23		35	3		9	2		10		14	
60	Oswego	40	1	23	2	1	14			6		5	
61	Palermo	14	2	11	2	1	8			1		1	
62	Parish	30		14	1		8			1		3	
25	*Parish, village*	7		8			7						
63	Redfield	19	1	10	4		2					1	
64	Richland	44	3	33	5	2	20			7	1	7	
26	*Pulaski, village*	43		26	2		18	1		3		6	
65	Sandy Creek	25		17	3	1	13			1			
27	*Lacona, village*	8	1	10	1		7			1		4	
28	*Sandy Creek, village*	15	1	18	1		11	1		1			
66	Schroeppel	24		22	3	1	12			14		3	
29	*Phoenix, village*	31	1	25		1	17			1		1	
67	Scriba	30		22	2		14					6	
68	Volney	41	5	32	5	2	18	1		1		15	
69	West Monroe	13	1	14	3		8	1				4	
70	Williamstown	19		13	1		9			56		2	
71	Minetto	21	1	12	2		6						
38	OTSEGO COUNTY	827	2	787	51	2	492	36	4	45[illegible]	4	116	1
01	**Oneonta, city**	236	[illegible]	19[illegible]	11	[illegible]	91	9	1	106	1	62	1
50	Burlington	13		1[illegible]	2	2	7			5			
51	Butternuts	27		13	2		7						
20	*Gilbertsville, village*	6		5			5						
52	Cherry Valley	7		10	1		8	1					
21	*Cherry Valley, village*	9		11	1		7	1					
53	Decatur	9		6		1	4			8			
54	Edmeston	30	1	28	1	1	19			1			
55	Exeter	13		15	3	1	6						
56	Hartwick	19	1	22	1		17			99			
57	Laurens	20		15	1		9	2		1		1	
22	*Laurens, village*	2		12			9						
58	Maryland	26	2	14			10			14		2	

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary, and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
2	....	....	....	....	1	2	2	....	....	....	1	....	1	15	52
2	....	4	....	....	....	....	....	....	....	2	....	1	2	8	53
....	1	....	....	....	....	1	....	....	....	....	1	2	....	15	54
19	....	....	....	....	....	2	2	....	....	....	1	2	....	9	55
1	....	5	1	....	....	2	3	1	....	....	....	2	....	8	56
....	....	*1*	....	....	....	*1*	....	*1*	....	....	*1*	....	*3*	*14*	*21*
1	....	1	....	....	....	1	....	....	1	....	2	5	....	30	57
1	*1*	*3*	....	....	....	*6*	*6*	....	....	*4*	*1*	*6*	*4*	*66*	*22*
....	....	2	....	....	....	....	....	....	....	....	3	2	....	16	58
10	....	....	....	1	....	1	....	....	....	....	1	1	....	8	59
....	....	....	....	....	....	*4*	....	....	....	....	....	....	....	*4*	*23*
114	4	12	11	1	6	91	5,	7	5	3,	41	78	23	825	37
8	....	2,	1	....	1	33	5	1	1	4	11	7	4	143	01
33	....	62	4	....	....	36	18	1	2	6	13	25	9	254	02
1	....	....	....	....	....	....	1	....	....	1	....	....	1	10	50
....	....	....	....	....	....	....	....	....	....	*1*	....	....	....	*3*	*20*
....	....	1	....	....	....	....	1	....	....	2	....	....	....	2	51
1	....	....	....	....	....	2	....	....	....	....	....	2	....	1	52
5	....	....	....	....	....	....	2	....	....	2	4	1	....	22	53
2	....	*2*	....	....	....	*1*	....	....	....	*1*	*1*	*2*	....	*7*	*21*
4	1	4	1	....	....	5	3	3	....	2	2	1	....	21	54
1	....	1	....	....	....	1	....	....	....	....	2	3	....	13	55
....	....	....	....	....	*1*	....	....	....	....	....	*1*	*1*	....	*5*	*22*
5	....	3	....	....	....	....	....	....	....	....	....	3	1	14	56
1	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*6*	*23*
11	....	....	....	....	....	2	1	1	....	2	....	3	1	42	57
14	....	*2*	....	....	....	....	*1*	....	*1*	*1*	....	*3*	*1*	*13*	*24*
....	....	1	....	....	....	....	....	....	....	....	1	2	....	12	58
....	....	1	1	....	....	....	22	....	....	2	....	....	1	9	59
....	....	1	....	1	1	1	....	....	....	....	....	2	....	20	60
....	....	2	....	....	....	....	....	....	....	1	....	....	....	10	61
....	....	2	1	....	....	....	....	....	....	....	....	1	1	11	62
....	....	....	....	....	....	*1*	....	*1*	....	*2*	....	*1*	....	*5*	*25*
....	....	....	....	....	....	1	1	....	....	....	....	1	....	8	63
....	....	3	1	....	....	....	....	....	....	2	1	1	1	26	64
....	....	*2*	....	....	....	....	....	....	....	....	*1*	*2*	....	*23*	*26*
1	....	....	....	....	....	1	1	....	....	2	....	2	1	11	65
5	....	....	....	....	....	*1*	....	....	....	....	....	....	*1*	*9*	*27*
....	....	....	....	....	....	....	....	....	....	*1*	....	*4*	....	*13*	*28*
15	2	3	....	....	1	....	....	....	....	....	1	....	2	16	66
....	....	....	....	....	*1*	*1*	*1*	....	....	....	*1*	*2*	....	*20*	*29*
....	....	2	....	....	....	1	....	....	....	1	....	1	....	20	67
....	....	5	1	....	1	3	....	....	....	....	1	3	....	26	68
....	....	....	....	....	....	1	1	....	....	....	1	1	1	10	69
....	....	....	....	....	....	....	....	....	....	....	....	2	....	11	70
7	1	1	1	....	....	....	1	....	1	....	....	1	....	7	71
110	3	34	2	56	6	2,	1,	4	6	23	38	68	6	615	38
3	1	17	2	5	1	....	4	2	....	5	10	9	2	160	01
2	....	1	....	....	....	1	....	....	....	2	1	1	....	11	50
....	....	....	....	....	2	1	....	1	....	1	....	3	....	7	51
....	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*4*	*20*
....	....	....	....	....	....	....	....	1	1	....	....	1	....	8	52
1	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*10*	*21*
....	....	....	....	....	1	....	....	....	....	....	....	1	....	4	53
2	....	2	....	....	....	....	....	....	....	....	1	6	....	21	54
7	1	....	....	2	....	....	1	....	1	1	2	1	....	8	55
17	....	6	....	38	....	1	....	....	....	....	3	2	....	17	56
....	....	....	....	....	....	4	3	....	....	....	....	1	....	11	57
....	....	....	....	....	....	*1*	*1*	....	....	*1*	*1*	*2*	....	*7*	*22*
2	....	*1*	....	....	....	*1*	*2*	....	....	1	1	....	....	10	58

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of still births)	Still-births	All deaths (exclusive of still-births)	DEATHS AT AGE OF — Under 1 year	DEATHS AT AGE OF — 1-4 years	DEATHS AT AGE OF — 60 years and over	CASES AND — Typhoid fever, 1 — Cases	CASES AND — Typhoid fever, 1 — Deaths	CASES AND — Measles, 7 — Cases	CASES AND — Measles, 7 — Deaths	CASES AND — Scarlet fever 8 — Cases	CASES AND — Scarlet fever 8 — Deaths
	OTSEGO Co.— (*Concluded*)												
23	*Schenevus, village*	*7*	*1*	*15*			*14*		*1*				
59	Middlefield	15		46	2		38	1		2		1	
24	*Cooperstown, village*	*84*	*1*	*56*	*5*	*1*	*28*	*2*		*91*	*1*		
60	Milford	14		21			18	4		1		3	
25	*Milford, village*	*3*		*8*			*8*						
61	Morris	16		12	2		9			1			
26	*Morris, village*	*8*		*14*	*1*		*7*						
62	New Lisbon	12		16		1	10	3	1	9			
63	Oneonta	18	4	27	1		19	3	1	5		6	
64	Otego	14		10	2	1	5			6		1	
27	*Otego, village*	*9*	*1*	*6*	*1*		*5*	*2*		*2*			
65	Otsego	30	1	25	1	2	15			1			
66	Pittsfield	13		8	1	1	4			1			
67	Plainfield	11	1	13	2		8			20	2		
68	Richfield	11		12	1		8			5		2	
28	*Richfield Springs, village*	*26*		*26*	*2*		*19*			*3*		*2*	
69	Roseboom	9		12	1		9						
70	Springfield	22	1	15	2	1	12	1		1		3	
71	Unadilla	19	1	13		1	8			1			
29	*Unadilla, village*	*15*	*2*	*21*	*2*		*17*			*2*			
72	Westford	7		10	2		6	1				2	
73	Worcester	47	1	36		2	27			66		25	
39	PUTNAM COUNTY	214	7	144	16	3	83			35		12	
50	Carmel	46	2	31	4	1	20						
51	Kent	12		20	3		12						
52	Patterson	25		13	1		6			3			
53	Phillipstown	18		18	1		12			33		1	
20	*Cold Spring, village*	*32*		*13*	*2*	*2*	*8*			*1*			
21	*Nelsonville, village*	*21*	*1*	*8*	*1*		*4*					*1*	
54	Putnam Valley	7		8			3						
55	Southeast	29	2	17	4		7			2		7	
22	*Brewster, village*	*24*	*2*	*18*			*11*					*4*	
41	RENSSELAER COUNTY	2,031	77	1,755	186	85	838	47	8	1,834	13	118	2
01	**Rensselaer, city**	158	6	114	16	4	66	2		77		15	
02	**Troy, city**	1,435	58	1,161	134	70	515	35	7	1,300	11	48	2
50	Berlin	25		18	1	1	11	1		111	1	4	
51	Brunswick	42	3	37	3	1	25			145		7	
52	East Greenbush	18		16	1		10			14		1	
53	Grafton	10		20	2		12			36			
54	Hoosick	36	2	42	2	1	26			9		13	
20	*Hoosick Falls, village*	*66*	*2*	*56*	*6*	*3*	*29*	*2*		*6*		*4*	
55	Nassau	24	1	21	1		9	1		5		2	
21	*Nassau, village*	*5*		*6*			*4*			*1*		*11*	
56	North Greenbush	17		74	1		17			10			
57	Petersburg	14		19	3	1	13			13		8	
58	Pittstown	38	1	28			16	1		37	1		
22	*Valley Falls, village (61)*	*13*	*1*	*10*		*2*	*4*	*1*					
59	Poestenkill	11	1	11	1	1	8	3		65		3	
60	Sandlake	21		30	2		20		1				
61	Schaghticoke (22)	28	1	28	4	1	15						
23	*Schaghticoke, village*	*4*		*7*			*5*						
62	Schodack	23		33	1		18	1		3			
24	*Castleton, village*	*19*	*1*	*10*	*1*		*6*			*2*			
63	Stephentown	24		14	1		9					2	
43	ROCKLAND COUNTY	906	37	616	49	27	286	8		247	2	105	
50	Clarkstown	111	4	97	7	8	52	1		79	2	34	
20	*Upper Nyack, village*	*8*	*1*	*4*			*3*			*2*		*1*	
51	Haverstraw	17		12	1		8					5	
21	*Haverstraw, village*	*93*	*4*	*51*	*4*	*2*	*19*			*21*		*9*	

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM — Whooping-cough, 9: Cases	Whooping-cough, 9: Deaths	Diphtheria, 10: Cases	Diphtheria, 10: Deaths	Influenza, 11: Cases	Influenza, 11: Deaths	TUBERCULOSIS — Pulmonary, and acute miliary 31, 37c: Cases	Pulmonary, and acute miliary 31, 37c: Deaths	Other forms, 32-37a, b: Cases	Other forms, 32-37a, b: Deaths	PNEUMONIA — Broncho, 100: Deaths	Lobar and unqualified, 101: Deaths	Cancer, 43-49: Deaths	Diarrhea and enteritis (under 2 years), 113: Deaths	All other causes: Deaths	District number
12	...	...	...	...	...	*2*	*1*	...	...	...	...	*1*	...	*12*	*23*
...	...	...	...	1	...	...	...	...	...	2	2	5	1	36	59
9	...	...	...	...	*2*	*1*	...	*1*	*1*	*1*	...	*1*	...	*50*	*24*
...	...	...	...	...	...	1	2	...	...	1	1	3	...	14	60
1	...	...	...	...	...	*1*	...	...	...	...	*1*	...	...	*7*	*25*
1	...	...	...	...	...	...	...	...	...	1	...	1	...	10	61
...	...	...	...	...	...	...	*1*	...	...	...	...	*3*	...	*10*	*26*
...	...	...	...	3	...	...	1	...	...	...	1	1	...	12	62
3	...	1	...	...	...	3	...	...	...	...	3	3	...	20	63
17	...	1	...	...	...	1	...	...	...	1	1	...	...	8	64
15	*1*	...	...	*3*	...	...	...	...	...	...	...	...	...	*5*	*27*
11	...	...	...	1	...	...	1	...	...	2	1	...	1	20	65
1	...	...	...	3	...	...	...	...	...	1	...	...	...	7	66
...	...	...	...	...	...	1	...	...	...	1	...	1	...	9	67
...	...	...	...	...	...	...	...	...	...	...	4	1	...	7	68
2	...	*2*	...	...	...	*1*	*2*	...	...	*1*	*1*	*2*	...	*20*	*28*
...	...	...	...	...	...	...	...	...	...	...	...	1	...	11	69
...	...	2	...	...	...	2	...	...	1	...	1	...	1	12	70
2	...	...	...	...	...	1	...	1	...	...	...	...	...	13	71
...	...	...	...	...	...	...	...	...	...	*1*	*1*	*2*	...	*17*	*29*
2	...	...	...	...	...	...	...	...	...	...	1	...	1	8	72
...	...	1	...	...	...	...	...	...	...	...	1	6	...	29	73
112	...	32	2	11	2	23	6	2	1	...	4	10	3	118	39
2	...	2	...	...	1	1	1	...	...	...	...	2	1	26	50
...	...	...	...	...	1	...	...	...	...	...	1	...	...	18	51
...	...	...	...	...	...	6	2	...	...	...	...	...	1	10	52
41	...	1	...	2	...	7	2	...	...	...	...	1	...	15	53
36	...	*19*	*1*	...	...	*3*	...	...	...	...	...	*2*	*1*	*9*	*20*
9	...	*3*	...	...	...	*1*	...	*1*	*1*	...	...	...	...	*7*	*21*
17	...	...	...	9	...	1	...	1	...	...	1	...	...	7	54
7	...	7	1	...	...	2	1	...	...	...	...	3	...	12	55
...	...	...	...	...	...	*2*	...	...	...	...	*2*	*2*	...	*14*	*22*
357	15	104	12	73	11	177	113	28	19	68	62	178	45	1,209	41
13	...	10	1	...	...	11	1	3	...	6	2	15	2	87	01
251	12	60	5	...	5	145	46	24	19	46	41	117	38	812	02
10	...	1	...	13	...	1	1	...	...	3	1	2	...	13	50
15	...	3	...	...	...	4	3	1	...	...	3	3	...	25	51
...	...	...	...	...	...	1	...	...	...	1	...	5	...	10	52
3	1	...	...	...	1	3	4	...	...	1	1	1	1	10	53
...	...	8	4	...	1	1	...	...	...	...	3	4	...	30	54
1	...	*11*	*1*	...	...	*1*	...	...	...	*4*	*1*	*7*	*2*	*41*	*20*
...	...	2	...	...	...	1	...	...	...	1	3	2	...	15	55
...	...	...	...	...	...	*1*	*1*	...	...	...	...	...	...	*6*	*21*
...	...	...	...	...	...	...	53	...	...	...	...	2	...	19	56
40	1	...	...	...	2	2	...	...	...	1	...	2	...	13	57
15	...	...	...	41	1	1	1	...	...	...	...	2	...	23	58
6	...	*6*	*1*	*18*	*1*	...	*1*	...	...	...	...	*1*	...	*6*	*22*
...	1	...	...	...	...	1	...	...	...	2	...	1	1	6	59
...	...	...	...	...	...	...	...	...	...	1	4	2	...	22	60
...	...	1	...	...	...	...	...	...	...	2	2	...	...	24	61
...	...	...	...	...	...	*2*	...	...	...	...	...	*1*	...	*6*	*23*
2	...	...	...	...	...	...	1	...	...	...	...	7	...	25	62
...	...	*2*	...	...	...	*1*	*1*	...	...	...	...	*2*	*1*	*6*	*24*
2	...	...	...	1	...	1	...	...	...	...	1	2	...	11	63
189	5	105	7	6	6	72	51	10	3	17	19	51	15	440	43
67	1	16	2	...	...	11	2	1	...	4	2	10	2	72	50
...	...	*1*	...	...	...	*1*	...	...	...	...	*1*	*1*	...	*2*	*20*
...	...	...	...	...	1	5	2	1	...	...	...	...	...	9	51
7	...	*2*	...	*4*	*1*	*6*	*9*	*2*	...	*3*	*4*	*2*	*1*	*31*	*21*

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)[1]	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1–4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	ROCKLAND CO — (*Concluded*												
22	*West Haverstraw, village*	51	3	22	1	1	9	....	....	1	....	....	....
52	Orangetown	98	3	60	8	....	43	1	....	47	....	12	....
23	*Grand-View-on-Hudson, village*	2	....	....	....	....	....	....	....	....	....	....	....
24	*Nyack, village*	109	4	106	7	3	42	3	....	43	....	14	....
25	*Piermont, village*	34	....	21	2	....	10	....	....	17	....	....	....
26	*South Nyack, village*	26	2	19	1	2	15	1	....	23	....	4	....
53	Ramapo	89	2	69	7	1	41	2	....	5	....	12	....
27	*Hillburn, village*	27	1	8	2	1	4	....	....	1	....	....	....
28	*Spring Valley, village*	77	4	20	3	1	9	....	....	2	....	5	....
29	*Suffern, village*	99	9	55	4	4	22	....	....	4	....	1	....
54	Stony Point	62	....	32	2	2	11	....	....	2	....	8	....
10	Letchworth village, Thiells	3	....	27	....	1	....	....	....	....	....	....	....
11	New York State Hospital for Crippled and Deformed Children, West Haverstraw	....	....	4	....	1	....	....	....	....	....	....	....
44	ST. LAWRENCE COUNTY	2,037	89	1,348	202	35	700	159	13	872	5	230	2
01	Ogdensburg, city	404	13	296	60	6	116	20	3	2	1	26	....
50	Brasher	48	2	21	4	....	13	....	....	11	....	10	....
51	Canton	106	3	52	5	3	30	5	....	1	....	6	....
20	*Canton, village*	45	1	45	4	....	31	1	....	....	....	....	....
31	*Rensselaer Falls, village*	2	....	3	....	....	1	....	....	....	....	....	....
52	Clare	8	....	3	1	....	2	....	....	....	....	....	....
53	Clifton	32	2	13	1	4	4	4	....	1	....	6	....
54	Colton	20	1	17	1	....	6	....	....	2	....	3	....
55	De Kalb	37	1	26	3	1	18	4	....	24	....	4	....
21	*Richville, village*	5	....	10	2	....	5	....	....	13	....	1	....
56	Depeyster	19	1	5	1	....	2	....	....	22	....	....	....
57	Edwards	26	1	15	2	....	9	9	2	12	....	5	....
22	*Edwards, village*	16	....	7	1	....	3	1	....	....	....	....	....
58	Fine	25	3	15	3	....	5	....	....	2	....	6	....
59	Fowler	30	1	16	4	1	5	3	....	25	1	2	....
60	Gouverneur	52	2	14	2	....	8	8	....	58	....	1	....
23	*Gouverneur, village*	80	7	51	5	2	33	61	4	276	1	12	....
61	Hammond	23	1	18	3	....	9	....	....	....	....	10	1
24	*Hammond, village*	9	....	4	1	....	3	....	....	....	....	2	....
62	Hermon	17	1	9	....	....	4	....	....	1	....	4	....
25	*Hermon, village*	15	....	10	....	....	9	....	....	1	....	....	....
63	Hopkinton	25	1	15	3	....	11	....	....	23	....	5	....
64	Lawrence	33	1	31	3	1	17	3	....	30	....	1	....
65	Lisbon	53	2	29	1	1	18	1	....	1	....	3	....
66	Louisville	31	5	9	1	....	7	1	....	21	....	4	....
67	Macomb	28	1	10	2	....	2	....	....	3	....	7	....
68	Madrid	30	1	20	2	....	13	....	....	14	....	....	....
69	Massena	62	5	8	1	1	3	1	....	43	....	11	....
26	*Massena, village*	188	9	57	11	3	31	3	2	109	1	15	....
70	Morristown	21	1	13	1	1	11	....	....	....	....	1	....
27	*Morristown, village*	9	....	8	1	1	5	....	....	....	....	....	....
71	Norfolk	68	2	26	9	....	11	....	....	4	....	4	....
28	*Norwood, village* (77)	57	2	20	3	....	10	2	....	7	....	9	....
72	Oswegatchie	27	....	21	2	....	11	1	....	1	....	1	....
32	*Heuvelton, village*	5	....	9	....	....	6	1	....	....	....	....	....
73	Parishville	22	2	26	2	....	16	6	2	....	....	9	....
74	Piercefield	34	1	16	8	2	3	15	....	111	1	13	....
75	Pierrepont	22	1	11	2	1	2	....	....	....	....	13	....
76	Pitcairn	19	....	6	2	1	2	....	....	6	....	1	....
77	Potsdam (28)	66	1	30	8	1	11	7	....	6	....	14	....
29	*Potsdam, village*	76	6	74	15	1	41	....	....	9	....	9	....
78	Rossie	11	....	10	3	1	4	....	....	....	....	1	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS: Pulmonary and acute miliary, 31, 37c		TUBERCULOSIS: Other forms, 32-37a, b		PNEUMONIA: Broncho, 100	PNEUMONIA: Lobar and unqualified, 101	Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
18	1	1	....	....	....	1	2	....	....	1	....	....	....	18	22
33	....	19	....	1	....	9	4	1	....	1	1	3	5	55	52
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	23
6	1	15	1	....	....	9	9	2	....	2	5	10	....	78	24
....	....	4	1	....	....	1	....	....	....	1	....	3	1	15	25
....	....	6	1	....	....	1	....	....	....	....	....	5	....	13	26
13	....	13	1	....	3	6	14	....	....	....	1	4	1	45	53
8	....	....	....	....	....	1	....	1	....	2	1	2	....	3	27
6	1	19	....	....	....	10	....	....	....	....	1	3	1	14	28
5	....	6	....	1	1	7	2	2	....	....	3	2	1	46	29
25	....	2	....	....	....	4	3	....	....	....	....	6	3	20	54
1	1	1	....	....	....	....	4	....	....	3	....	....	....	19	10
....	....	....	1	....	....	....	....	....	3	....	....	....	....	....	11
104	2	90	9	17	14	69	64	7	8	29	40	103	50	1,009	44
....	1	17	....	....	3	14	7	1	2	2	7	26	9	235	01
2	....	....	....	....	....	2	2	1	....	....	3	1	2	13	50
1	....	....	....	2	....	3	1	1	1	....	1	7	4	38	51
....	....	....	....	....	....	4	2	1	....	....	2	6	1	34	20
....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	31
....	....	1	....	....	....	....	....	....	....	....	....	1	....	2	52
23	....	4	1	....	....	....	1	....	....	....	....	....	....	11	53
....	....	....	....	....	....	....	2	....	1	....	....	1	....	13	54
....	....	9	....	....	....	2	....	....	1	....	1	3	2	19	55
....	....	11	2	....	....	....	1	....	....	....	1	....	1	5	21
....	....	....	....	....	....	....	....	....	....	1	....	....	....	4	56
1	....	2	....	....	....	1	....	....	....	1	....	....	....	12	57
....	....	1	....	....	....	....	....	....	....	....	....	....	....	7	22
....	....	5	2	....	....	....	....	....	....	....	3	....	1	9	58
....	....	....	....	....	....	2	2	....	....	1	....	....	....	12	59
1	....	....	....	....	....	1	1	....	....	....	....	....	2	11	60
21	....	2	1	....	....	4	4	....	1	1	1	1	2	35	23
....	....	....	....	....	1	....	....	....	....	....	1	1	....	14	61
....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	24
....	....	....	....	....	....	....	1	....	....	....	....	....	....	7	62
....	....	....	....	....	....	....	....	....	....	1	....	....	....	7	25
....	....	....	....	4	....	....	....	....	....	....	2	....	1	11	63
....	....	1	....	11	1	....	....	....	....	1	....	1	....	28	64
....	....	....	....	....	....	2	1	....	....	1	....	3	....	24	65
....	....	3	....	....	....	1	....	....	....	....	1	3	....	5	66
....	....	....	....	....	....	1	2	....	....	....	1	....	....	7	67
1	....	1	....	....	2	1	....	....	....	1	1	2	....	14	68
....	....	2	....	....	....	....	....	....	....	....	....	2	....	6	69
7	....	4	....	....	2	10	3	1	....	....	2	6	1	40	26
....	....	....	....	....	....	....	....	....	....	....	....	4	....	9	70
....	....	....	....	....	....	....	....	....	....	1	....	1	....	6	27
3	....	2	....	....	....	7	2	1	....	1	1	2	1	19	71
6	....	7	1	....	....	2	1	....	1	3	....	1	1	12	28
....	....	2	....	....	1	1	2	....	....	1	1	1	....	15	72
....	....	....	....	....	....	1	1	....	....	....	....	1	....	7	32
....	....	1	....	....	....	....	1	1	....	1	1	1	1	19	73
24	....	10	1	....	....	1	....	....	....	....	....	....	5	9	74
....	....	....	....	....	2	....	....	....	....	....	1	2	1	5	75
10	....	....	....	....	....	....	....	....	....	....	1	....	....	5	76
1	....	....	....	....	....	....	....	....	....	1	....	4	4	21	77
1	....	....	....	....	1	4	3	....	....	1	1	7	4	57	29
2	1	5	1	....	....	....	....	....	....	....	....	....	2	6	78

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year			CASES AND Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
					Under 1 year	1-4 years	60 years and over	Cases	Deaths	Cases	Deaths	Cases	Deaths
	ST. LAWRENCE CO.—(*Conc'd*)												
79	Russell	39	1	30	5	2	17	1	....	2	....	....	....
80	Stockholm	56	4	37	8	1	22	....	....	6	....	9	....
81	Waddington	25	2	14	4	....	9	....	....	21	....	2	....
30	*Waddington, village*	*13*	....	*8*	*2*	....	*5*	....	....	*4*	....	....	....
10	St. Lawrence State Hospital	....	1	160	....	....	96	1	....	....	....	....	1
45	SARATOGA COUNTY	1,145	42	860	89	46	417	53	....	1,427	16	111	4
01	**Saratoga Springs, city**	275	9	270	15	10	133	3	....	438	1	9	2
02	**Mechanicville, city**	174	4	82	12	8	38	33	....	384	5	67	2
50	Ballston	17	....	21	....	2	12	....	....	51	1	2	....
20	*Ballston Spa, village (61)*	*55*	*7*	*55*	*1*	*2*	*31*	....	....	*69*	....	*3*	....
51	Charlton	24	....	14	5	....	7	....	....	18	....	11	....
52	Clifton Park	21	....	12	2	....	8	....	....	12	....	....	....
53	Corinth	33	1	13	1	....	8	5	....	1	....	....	....
21	*Corinth, village*	*50*	*3*	*28*	*8*	*2*	*8*	*2*	....	....	....	....	....
54	Day	17	....	7	1	....	4	....	....	5	....	....	....
55	Edinburg	15	1	10	2	....	6	....	....	3	....	....	....
56	Galway	15	....	13	1	....	11	....	....	3	1	3	....
22	*Galway, village*	*2*	....	....	....	....	....	....	....	*1*	....	....	....
57	Greenfield	31	1	16	2	1	10	....	....	14	....	....	....
58	Hadley	11	1	6	1	....	3	....	....	55	1	....	....
59	Halfmoon	25	1	15	2	2	7	2	....	8	....	3	....
60	Malta	14	1	12	....	....	5	....	....	41	....	2	....
61	Milton (20)	30	2	38	4	2	22	....	....	27	1	1	....
62	Moreau	26	1	27	1	1	6	....	....	21	....	....	....
24	*South Glens Falls, village*	*31*	*1*	*27*	*4*	*1*	*14*	*4*	....	*30*	....	....	....
63	Northumberland	23	....	10	3	....	5	....	....	14	....	....	....
64	Providence	11	....	21	2	....	5	....	....	....	....	....	....
65	Saratoga	16	....	14	1	1	9	2	....	2	....	....	....
25	*Schuylerville, village*	*34*	*2*	*16*	*5*	....	*8*	....	....	*6*	....	....	....
26	*Victory Mills, village*	*12*	....	*8*	....	....	*7*	....	....	....	....	....	....
66	Saratoga Springs*	....	....	....	....	....	....	....	....	....	....	....	....
67	Stillwater (23)	83	....	41	10	8	14	....	....	94	5	10	....
27	*Stillwater, village*	*10*	....	*12*	....	....	*7*	....	....	*108*	....	....	....
68	Waterford	38	....	21	2	5	8	1	....	....	....	....	....
28	*Waterford, village*	*42*	*5*	*36*	*4*	*1*	*12*	....	....	*1*	....	....	....
69	Wilton	10	2	15	2	....	9	1	....	21	1	....	....
46	SCHENECTADY COUNTY	2,220	79	1,101	142	50	461	36	7	648	3	289	10
01	**Schenectady, city**	1,841	71	883	118	41	365	28	5	367	3	203	10
50	Duanesburg	31	....	32	1	....	20	....	....	7	....	7	....
51	Glenville	48	....	63	2	1	24	....	....	19	....	12	....
20	*Scotia, village*	*67*	*4*	*28*	*3*	*1*	*12*	*1*	*1*	*147*	....	*19*	....
52	Niskayuna	47	....	23	2	....	14	4	....	24	....	6	....
53	Princetown	7	....	5	....	....	3	....	....	4	....	2	....
54	Rotterdam	179	4	67	16	7	23	3	1	80	....	40	....
47	SCHOHARIE COUNTY	375	16	313	21	2	223	4	....	166	1	60	2
50	Blenheim	9	2	8	1	....	7	....	....	1	....	....	....
51	Broome	14	....	13	1	....	12	....	....	....	....	....	....
52	Carlisle	20	....	9	2	....	6	....	....	1	....	....	....
53	Cobleskill	41	1	16	....	....	11	....	....	3	....	1	....
20	*Cobleskill, village*	*31*	*1*	*25*	*2*	....	*15*	....	....	*5*	....	*1*	....
54	Conesville	13	....	10	1	....	5	....	....	....	....	8	....
55	Esperance	5	1	18	2	....	13	....	....	4	....	....	....
21	*Esperance, village*	*4*	....	*7*	....	....	*5*	....	....	....	....	....	....
56	Fulton	22	1	16	1	....	11	....	....	10	....	....	....
57	Gilboa	21	....	22	1	....	15	....	....	4	....	3	1
58	Jefferson	21	2	12	1	....	9	....	....	33	....	4	....
59	Middleburg	22	2	23	1	....	19	....	....	3	....	....	....

* Disorganized, included in city of

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

DEATHS FROM —															
						TUBERCULOSIS				PNEUMONIA					
Whooping cough, 9		Diphtheria, 10		Influenza, 11		Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101	Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	District number
....	....	....	....	....	...	1	2	....	....	2	....	1	3	22	79
....	....	....	....	....	...	4	2	....	....	1	1	4	2	27	80
....	....	....	....	....	1	....	....	....	....	....	....	1	....	12	81
....	....	....	....	....	...	....	....	....	....	....	....	....	....	*8*	*30*
....	....	....	....	....	...	....	19	....	1	7	6	5	....	121	10
281	2	49	3	56	3	99	65	9	7	31	24	63	18	624	45
221	....	13	1	43	1	31	13	5	4	6	6	22	7	207	01
9	....	2	....	4	...	17	2	6	1	4	3	5	1	59	02
2	....	1	....	....	...	1	1	....	1	....	....	2	....	16	50
6	....	....	....	....	...	*10*	*5*	*1*	....	*2*	*2*	*8*	....	*38*	*20*
6	....	....	....	5	...	1	2	....	....	....	2	....	1	9	51
....	....	....	....	....	...	....	....	....	....	....	....	1	1	10	52
....	....	....	....	....	...	2	....	....	....	....	1	1	1	10	53
3	....	....	....	....	...	....	*1*	....	....	*3*	*1*	....	....	*24*	*21*
....	....	....	....	....	1	....	....	....	....	....	....	1	1	4	54
....	....	....	....	....	...	4	2	....	....	1	....	2	....	5	55
1	1	....	....	....	...	6	1	....	....	....	....	....	....	10	56
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	*22*
....	....	....	....	....	...	1	....	....	....	....	2	....	....	14	57
....	....	....	....	....	...	....	1	....	....	1	....	....	....	3	58
1	....	1	....	....	...	1	2	....	....	1	....	....	....	12	59
....	....	....	....	4	1	2	1	....	....	....	....	1	....	9	60
4	....	2	....	....	...	....	1	....	1	3	2	4	1	25	61
....	....	....	....	....	...	3	9	....	....	....	....	2	....	15	62
....	....	*18*	....	....	...	*4*	*1*	....	....	*1*	....	*3*	*1*	*21*	*24*
....	....	....	....	....	...	....	....	....	....	....	....	1	....	9	63
....	....	5	....	....	...	....	17	....	....	1	....	....	1	2	64
....	....	....	....	....	...	1	1	....	....	3	....	....	....	10	65
2	....	*3*	....	....	...	....	....	....	....	*3*	....	*1*	....	*13*	*25*
....	....	....	....	....	...	*3*	....	....	....	....	*1*	*1*	....	*6*	*26*
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	66
13	1	....	....	....	...	3	....	....	....	1	3	1	3	27	67
....	....	....	....	....	...	*1*	....	....	....	....	....	*1*	....	*11*	*27*
1	....	3	2	....	...	1	1	....	....	3	1	....	....	14	68
1	....	*1*	....	....	...	*7*	*4*	....	....	....	....	*5*	....	*27*	*28*
11	....	....	....	....	...	....	....	....	....	....	....	....	....	14	69
569	3	351	14	4	6	127	69	15	18	30	33	83	12	813	46
497	3	298	13	4	2	105	33	12	12	27	32	75	9	659	01
....	....	....	....	....	2	3	2	....	....	....	....	....	....	28	50
4	....	30	....	....	2	....	26	....	4	1	1	1	....	28	51
13	....	*4*	....	....	...	....	*1*	....	*1*	....	....	*2*	*1*	*22*	*20*
3	....	1	....	....	...	5	....	....	....	1	....	2	....	20	52
....	....	....	....	....	...	....	1	....	....	....	....	....	....	4	53
52	....	18	1	....	...	14	6	3	1	1	....	3	2	52	54
7	1	6	1	2	...	13	11	1	1	8	7	34	2	243	47
....	....	....	....	....	...	....	....	....	....	....	....	1	....	7	50
....	....	....	....	....	...	....	....	....	....	1	1	4	....	7	51
....	....	....	....	....	...	....	....	....	....	1	....	....	1	7	52
....	....	....	....	....	...	....	1	....	....	....	....	2	....	13	53
....	....	....	....	....	...	*1*	*1*	....	....	*1*	....	*2*	....	*19*	*20*
....	....	....	....	....	...	....	1	....	....	....	....	2	....	7	54
....	....	....	....	....	...	1	2	....	....	....	1	2	....	13	55
....	....	....	....	....	...	*1*	*1*	....	....	....	....	*1*	....	*5*	*21*
....	....	....	1	....	...	3	1	....	....	1	....	1	....	12	56
....	....	....	....	1	...	2	....	....	1	....	1	1	1	16	57
....	....	....	....	....	...	1	1	....	....	1	....	....	....	10	58
....	....	....	....	....	...	1	1	....	....	....	2	2	....	18	59

Saratoga Springs

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	SCHOHARIE CO.— (*Concluded*)												
22	*Middleburg, village*	*12*	*2*	*18*	*1*	....	*15*	....	....	....	....	*1*	....
60	Richmondville	20	1	14	1	2	9	1	....	12	....	3	1
23	*Richmondville, village*	*6*	....	*14*	....	....	*11*	*2*	....	*3*	....	*8*	....
61	Schoharie	21	....	16	2	....	7	....	....	....	....	....	....
24	*Schoharie, village*	*14*	....	*20*	*2*	....	*13*	....	....	....	....	....	....
62	Seward	19	1	16	....	....	13	1	....	....	....	1	....
63	Sharon	20	1	9	1	....	6	....	....	....	....	....	....
25	*Sharon Springs, village*	*7*	*1*	*11*	....	....	*7*	....	....	....	....	....	....
64	Summit	20	....	10	....	....	9	....	....	77	1	30	....
65	Wright	13	....	8	1	....	7	....	....	10	....	....	....
48	SCHUYLER COUNTY	269	7	240	11	2	170	5	....	58	....	10	....
50	Catherine	13	....	13	1	....	10	....	....	16	....	....	....
20	*Odessa, village*	*8*	....	*8*	*1*	....	*6*	....	....	*21*	....	....	....
51	Cayuta	4	....	6	....	....	4	....	....	....	....	....	....
52	Dix	23	1	12	1	....	9	1	....	1	....	5	....
21	*Watkins, village (56)*	*67*	*4*	*60*	*3*	....	*39*	....	....	*1*	....	*1*	....
53	Hector	47	1	57	1	2	42	1	....	11	....	....	....
22	*Burdett, village*	*3*	....	*6*	....	....	*5*	*1*	....	*1*	....	....	....
54	Montour	5	....	10	1	....	7	....	....	6	....	....	....
23	*Montour Falls, village*	*37*	....	*22*	*1*	....	*13*	*2*	....	*1*	....	*1*	....
55	Orange	21	....	17	....	....	13	....	....	....	....	1	....
56	Reading (21)	19	1	15	1	....	9	....	....	....	....	....	....
57	Tyrone	22	....	14	1	....	13	....	....	....	....	2	....
49	SENECA COUNTY	412	13	555	40	3	319	35	6	296	....	98	....
50	Covert	20	....	18	2	....	11	5	2	3	....	3	....
20	*Interlaken, village*	*4*	....	*10*	....	....	*3*	*2*	....	*2*	....	....	....
51	Fayette	26	....	23	2	....	14	....	....	62	....	9	....
21	*Waterloo, village (59)*	*61*	*5*	*55*	*6*	....	*26*	*2*	*1*	*57*	....	*4*	....
52	Junius	15	....	8	1	....	5	4	2	10	....	....	....
53	Lodi	18	1	10	2	....	4	....	....	19	....	4	....
54	Ovid	25	....	18	3	....	11	3	....	1	....	5	....
22	*Ovid, village*	*6*	....	*11*	....	....	*7*	....	....	....	....	....	....
55	Romulus	31	1	19	6	....	8	2	....	8	....	10	....
56	Seneca Falls	7	....	13	....	....	11	....	....	12	....	3	....
23	*Seneca Falls, village*	*142*	*4*	*95*	*14*	*2*	*55*	7	....	*85*	....	*50*	....
57	Tyre	7	1	10	1	....	6	....	....	3	....	2	....
58	Varick	23	....	16	3	1	10	....	....	25	....	6	....
59	Waterloo (21)	26	1	14	....	....	9	4	....	9	....	2	....
10	Willard State Hospital	1	....	235	....	....	139	6	1	....	....	....	....
50	STEUBEN COUNTY	1,734	72	1,233	114	33	720	35	8	123	....	163	5
01	Corning, city	431	20	177	24	6	76	7	1	....	....	45	3
02	Hornell, city	314	13	227	29	5	105	4	2	98	....	28	....
50	Addison	6	....	6	1	1	2	1	....	....	....	....	....
20	*Addison, village*	*31*	....	*30*	*4*	....	*18*	*5*	*1*	....	....	*1*	....
51	Avoca	15	....	9	....	....	8	....	....	1	....	....	....
21	*Avoca, village*	*11*	....	*14*	....	*1*	*9*	....	....	....	....	*6*	*2*
52	Bath	33	1	57	4	2	31	....	....	1	....	4	....
22	*Bath, village*	*94*	*5*	*65*	*5*	....	*33*	*2*	....	*4*	....	*1*	....
23	*Savona, village*	*7*	....	*17*	....	*1*	*15*	....	....	....	....	*4*	....
53	Bradford	16	1	10	1	....	5	....	....	....	....	7	....
54	Cameron	15	....	10	....	1	6	....	....	....	....	....	....
55	Campbell	19	1	16	2	2	7	....	....	....	....	4	....
56	Canisteo	21	....	13	4	....	6	....	....	....	....	....	....
24	*Canisteo, village*	*44*	*2*	*38*	*2*	....	*28*	....	....	....	....	*1*	....
57	Caton	20	....	9	2	....	6	....	....	....	....	....	....
58	Cohocton	34	3	17	3	2	10	1	....	1	....	5	....
25	*Cohocton, village*	*12*	....	*8*	*1*	....	*5*	....	....	....	....	....	....
59	Corning	54	5	27	2	1	12	....	....	3	....	....	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	*1*	....	....	....	....	*1*	....	....	....	....	*1*	....	*16*	*22*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	13	60
....	....	....	....	....	....	*1*	....	....	....	....	....	*2*	....	*12*	*23*
6	1	2	....	....	....	....	1	....	....	1	....	1	....	12	61
....	....	....	....	....	*1*	*1*	....	*1*	....	*1*	....	*4*	....	*14*	*24*
....	....	....	....	....	....	....	....	....	....	....	....	2	....	14	62
1	....	3	....	....	....	....	....	....	....	....	1	2	....	6	63
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*11*	*25*
....	....	....	....	....	....	1	....	....	....	....	1	3	....	5	64
....	....	....	....	....	....	....	....	....	....	1	....	1	....	6	65
144	1	4	....	....	1	10	8	4	....	1	3	19	1	206	48
....	....	....	....	....	....	1	1	....	....	1	....	....	....	11	50
....	....	....	....	....	....	....	....	....	....	....	....	*1*	....	*7*	*20*
3	....	....	....	....	....	....	....	....	....	....	....	1	....	5	51
11	....	....	....	....	....	....	....	....	....	....	....	4	....	8	52
41	....	*1*	....	....	....	*2*	*2*	....	....	....	*2*	*4*	....	*68*	*21*
29	....	1	....	....	1	2	1	2	....	....	1	3	1	50	53
1	....	....	....	....	....	*1*	....	....	....	....	....	....	....	*6*	*22*
2	....	....	....	....	....	1	....	....	....	....	....	2	....	8	54
22	....	*1*	....	....	....	*2*	*2*	*2*	....	....	....	*3*	....	*17*	*23*
24	....	....	....	....	....	1	1	....	....	....	....	....	....	16	55
7	1	1	....	....	....	....	1	....	....	....	....	....	....	13	56
4	....	....	....	....	....	....	....	....	....	....	....	1	....	13	57
90		31	....	3	1	18	68	3	8	14	10	33	9	403	49
13	....	....	....	....	....	2	1	....	....	....	....	....	....	15	50
2	....	*2*	....	....	....	....	*3*	....	....	....	....	....	....	*7*	*20*
21	....	....	....	....	....	2	2	....	1	....	....	2	....	18	51
1	....	....	....	....	....	*1*	*1*	*1*	*1*	....	....	*6*	*1*	*45*	*21*
6	....	....	....	....	....	....	....	....	....	....	....	....	....	6	52
14	....	....	....	....	....	1	....	....	....	....	....	1	1	8	53
11	1	7	....	....	....	1	1	....	....	1	....	2	....	13	54
....	....	....	....	....	....	*1*	*2*	....	....	....	....	*3*	....	*6*	*22*
1	....	2	....	....	....	2	....	....	....	....	....	2	2	15	55
3	....	....	....	....	....	3	....	....	....	....	....	1	....	12	56
5	....	*17*	....	*3*	*1*	*4*	*2*	*1*	*1*	*3*	*2*	*11*	*3*	*73*	*23*
....	....	....	....	....	....	....	....	....	....	....	2	....	....	8	57
8	....	1	....	....	....	1	....	....	....	....	1	3	2	10	58
5	....	1	....	....	....	....	2	1	....	....	....	2	....	10	59
....	....	*1*	....	....	....	....	*54*	....	*5*	*11*	*5*	*5*	....	*154*	*10*
318	8	70	5	15	4	97	53	9	5	32	43	101	19	950	50
29	2	21	....	1	....	33	9	2	1	6	7	12	6	130	01
166	....	8	2	1	2	27	6	5	1	10	3	19	1	181	02
....	....	....	....	....	....	....	....	....	....	1	....	....	1	4	50
....	....	*1*	....	....	....	....	*2*	....	....	*1*	*1*	*3*	....	*22*	*20*
....	....	....	....	....	....	1	....	....	....	....	....	....	....	9	51
....	....	....	....	....	....	....	*1*	....	....	....	*2*	*1*	....	*8*	*21*
6	1	....	....	....	....	5	12	....	....	2	5	3	1	33	52
28	....	*1*	....	....	....	*7*	*1*	....	....	*2*	*3*	*5*	....	*64*	*22*
2	....	....	....	....	....	*2*	*2*	....	....	....	....	*1*	*1*	*13*	*23*
21	1	....	....	....	....	3	2	....	....	....	....	....	....	7	53
1	....	....	....	....	....	1	1	....	....	....	....	1	....	8	54
....	....	....	....	....	....	....	....	....	....	....	....	....	2	14	55
1	....	2	....	....	....	1	....	....	....	....	....	....	....	13	56
....	....	....	....	....	....	....	....	....	....	*2*	....	*6*	....	*30*	*24*
....	....	....	....	....	....	....	....	....	....	....	....	2	....	7	57
....	....	1	....	1	1	....	....	....	....	....	....	1	1	14	58
....	....	....	....	....	....	....	*1*	....	....	....	*1*	*1*	....	*6*	*25*
3	2	1	....	....	....	4	2	1	....	1	....	....	....	22	59

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	DEATHS AT AGE OF — 1-4 years	DEATHS AT AGE OF — 60 years and over	CASES AND — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles, 7 — Cases	Measles, 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
	STEUBEN CO.— (*Concluded*)												
32	*South Corning, village*	4		2									
60	Dansville	25		9	4		4						
61	Erwin	25		16	1	2	11		1			1	
26	*Painted Post, village*	50	1	19	1	1	10	3		2		7	
62	Fremont	9	1	7			5						
63	Greenwood	19	2	9	1	1	3						
64	Hartsville	8		5			4						
65	Hornby	14	1	8	1	2	3					4	
66	Hornellsville	74	4	71	3		39			4			
31	*Arkport, village*	9		5			5						
67	Howard	21	2	13	3		6					1	
68	Jasper	24		15	2		9	6	2	2		1	
69	Lindley	25		12	2	1	7	1	1				
70	Prattsburg	18		8	1		5	1				1	
27	*Prattsburg, village*	16		18			15						
71	Pulteney	12		19	1		14			1		5	
72	Rathbone	16		9	1	1	5						
73	Thurston	14		6			2					7	
74	Troupsburg	18	1	8		1	6	3					
75	Tuscarora	15	1	9	1		4			3		3	
76	Urbana	15		14	3		9					6	
28	*Hammondsport, village*	8	2	16	1		11					1	
77	Wayland	29	1	11		1	7					2	
29	*Wayland, village*	28		17	1	1	7	1		3		18	
78	Wayne	8	1	7			4						
79	West Union	18		7	2		4						
80	Wheeler	11	2	13			12						
81	Woodhull	21	2	6	1		4						
30	*Woodhull, village*	3		4			4						
10	New York State Soldiers' and Sailors' Home, Bath			120			119						
51	SUFFOLK COUNTY	2,325	76	2,148	147	52	952	79	6	96		154	6
50	Babylon	118	4	69	6	6	39					2	1
20	*Amityville, village*	35		115	2	3	63						
21	*Babylon, village*	67	4	54	6	1	25	3		2		2	1
51	Brookhaven	336	8	236	21	7	137	21	1	27		38	2
22	*Bellport, village*	2		4	1		3						
23	*Patchogue, village*	81		41	6		20			1		5	
28	*Shoreham, village*			1									
52	Easthampton	65		30	5		15			17		13	
24	*Sag Harbor, village* (58)	52	1	38	3	3	21						
32	*East Hampton, village*	26	1	20		1	12						
53	Huntington	357	15	174	14	1	86	28	4	31		20	1
25	*Northport, village*	22	2	25	1		16	7		1			
54	Islip	378	8	215	19	17	98	3		5		21	1
29	*Brightwaters, village*	7		3			3						
55	Riverhead	150	4	56	9	4	35					23	
56	Shelter Island	14	2	6			4					3	
57	Smithtown	82	5	40	5		24	10		9		1	
58	Southampton (24)	148	4	93	12	4	46	1				4	
26	*Southampton, village*	117	9	80	8	4	31	1	1			15	
59	Southold	139	5	60	10		30			1		7	
27	*Greenport, village*	107	4	53	12	1	25	3		1		2	
10	Central Islip State Hospital	8		457	2		131	2		1			
11	Kings Park State Hospital	14		280	5		92						
52	SULLIVAN COUNTY	591	21	581	41	12	204	15	2	116		93	
50	Bethel	32		34		1	16	2		47		5	
51	Callicoon	34		14	1		6			1		7	
52	Cochecton	13		21	4	1	12					6	

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —															
Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*2*	*32*
....	....	....	....	....	....	....	....	....	....	....	1	1	1	6	60
5	....	3	....	....	....	....	1	....	....	1	1	1	....	11	61
6	....	*20*	*1*	....	....	*1*	*1*	*1*	....	....	....	*3*	....	*14*	*26*
2	....	....	....	....	....	1	1	....	....	....	....	3	....	3	62
....	....	2	1	....	....	1	1	....	....	1	1	....	....	5	63
....	....	2	....	....	....	....	....	....	....	....	....	....	....	5	64
....	1	....	....	....	....	....	....	....	....	....	....	....	....	7	65
4	....	1	....	....	....	1	2	....	....	2	1	11	....	55	66
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*5*	*31*
....	....	1	1	....	....	2	....	....	....	....	1	2	....	9	67
14	....	....	....	....	....	....	....	....	....	....	2	3	....	8	68
....	....	....	....	....	....	....	1	....	....	....	....	1	....	9	69
....	....	....	....	....	....	1	....	....	....	....	....	1	1	6	70
....	....	....	....	....	....	....	....	....	....	....	*2*	*2*	....	*14*	*27*
....	....	....	....	....	....	2	2	....	1	....	1	1	1	13	71
....	....	....	....	....	....	....	....	....	....	....	....	1	1	7	72
....	....	....	....	....	....	....	2	....	1	....	....	2	....	1	73
....	....	....	....	....	....	1	....	....	....	....	....	1	....	7	74
....	....	....	....	....	....	....	....	....	....	1	1	1	....	6	75
....	....	....	....	....	....	1	....	....	....	....	....	2	1	11	76
4	....	*1*	....	*2*	....	*1*	....	....	....	....	....	*3*	*1*	*12*	*28*
8	1	2	....	3	....	....	1	....	....	....	1	....	....	8	77
11	....	*1*	....	*7*	*1*	*1*	*1*	....	....	*1*	....	*2*	....	*12*	*29*
7	....	....	....	....	....	....	....	....	....	....	....	....	....	7	78
....	....	1	....	....	....	....	1	....	....	....	1	....	....	5	79
....	....	....	....	....	....	....	....	....	....	....	....	1	....	12	80
....	....	1	....	....	....	....	....	....	....	....	....	....	....	6	81
....	....	....	....	....	....	....	....	....	....	....	*1*	....	....	*3*	*30*
....	....	....	....	....	....	....	....	....	1	1	7	4	....	107	10
388	8	242	23	110	18	128	182	23	14	64	71	147	16	1,593	51
1	....	....	2	....	....	....	....	....	....	3	2	6	1	54	50
....	....	....	....	....	....	....	*2*	....	....	*1*	*2*	*4*	....	*104*	*20*
25	*1*	*23*	*1*	....	....	*2*	*2*	....	....	*2*	*1*	*6*	*2*	*38*	*21*
8	....	18	2	6	....	14	30	2	3	7	11	20	3	157	51
....	....	....	....	....	....	....	....	....	....	....	*1*	....	....	*3*	*22*
3	....	*6*	....	*8*	....	*20*	*3*	*4*	....	*6*	....	*4*	....	*29*	*23*
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*1*	*28*
33	....	8	....	....	1	2	1	....	....	1	1	1	....	25	52
23	*3*	....	....	....	....	*2*	*2*	....	....	*2*	....	*6*	....	*25*	*24*
....	....	....	....	....	....	....	....	....	....	....	*2*	....	....	*18*	*32*
3	....	12	....	....	1	15	9	1	2	3	9	19	3	123	53
2	....	....	....	....	....	*4*	....	*1*	*1*	*2*	*1*	*3*	....	*18*	*25*
153	1	104	8	82	6	27	7	5	2	3	6	26	2	153	54
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*3*	*29*
9	....	38	5	....	1	11	2	2	....	1	2	2	1	42	55
....	....	1	....	....	....	....	....	....	....	....	....	....	....	6	56
15	....	3	2	....	....	8	2	2	....	....	1	1	1	33	57
58	2	8	....	1	2	4	4	2	....	....	3	7	1	74	58
49	*1*	*9*	*1*	....	*1*	*9*	*1*	*2*	*2*	....	*1*	*5*	....	*67*	*26*
2	....	5	1	....	1	5	2	....	....	2	1	4	2	47	59
....	....	*7*	*1*	....	*1*	*4*	*2*	*2*	....	....	*3*	*7*	....	*39*	*27*
....	....	5	....	13	4	1	75	....	2	14	12	10	....	340	10
4	....	....	....	....	....	....	38	....	2	18	12	16	....	194	11
103	....	43	3	2	4	690	204	54	4	14	10	32	8	300	52
....	....	6	....	....	....	2	4	....	....	1	1	1	....	27	50
2	....	2	....	....	....	7	2	....	....	....	....	1	....	11	51
11	....	2	....	....	....	12	1	....	....	....	....	4	....	16	52

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	ROCKLAND Co. — (*Concluded*)												
22	*West Haverstraw, village*	51	3	22	1	1	9	....	....	1	....	....	....
52	Orangetown	98	3	69	8	....	43	1	....	47	....	12	....
23	*Grand-View-on-Hudson, village*	2	....	....	....	....	....	....	....	....	....	....	....
24	*Nyack, village*	109	4	106	7	3	42	3	....	43	....	14	....
25	*Piermont, village*	34	....	21	2	....	10	....	....	17	....	....	....
26	*South Nyack, village*	26	2	19	1	2	13	1	....	23	....	4	....
53	Ramapo	89	2	69	7	1	41	2	....	5	....	12	....
27	*Hillburn, village*	27	1	8	2	1	4	....	....	1	....	....	....
28	*Spring Valley, village*	77	4	20	3	1	9	....	....	2	....	5	....
29	*Suffern, village*	99	9	55	4	4	22	....	....	4	....	1	....
54	Stony Point	62	....	32	2	2	11	....	....	2	....	8	....
10	Letchworth village, Thiells	3	....	27	....	1	....	....	....	....	....	....	....
11	New York State Hospital for Crippled and Deformed Children, West Haverstraw	....	....	4	....	1	....	....	....	....	....	....	....
44	ST. LAWRENCE COUNTY	2,037	89	1,348	202	35	700	159	13	872	5	230	2
01	**Ogdensburg, city**	404	13	296	60	6	116	20	3	2	1	26	....
50	Brasher	48	2	21	4	....	13	....	....	11	....	10	....
51	Canton	106	3	52	5	3	30	5	....	1	....	6	....
20	*Canton, village*	43	1	45	4	....	31	1	....	....	....	....	....
31	*Rensselaer Falls, village*	2	....	3	....	....	1	....	....	....	....	....	....
52	Clare	8	....	3	1	....	2	....	....	....	....	....	....
53	Clifton	32	2	13	1	4	4	4	....	1	....	6	....
54	Colton	20	1	17	1	....	6	....	....	2	....	3	....
55	De Kalb	37	1	26	3	1	18	4	....	24	....	4	....
21	*Richville, village*	5	....	10	2	....	5	....	....	13	....	1	....
56	Depeyster	19	1	5	1	....	2	....	....	22	....	....	....
57	Edwards	26	1	15	2	....	9	9	2	12	....	5	....
22	*Edwards, village*	16	....	7	1	....	3	1	....	....	....	....	....
58	Fine	25	3	15	3	....	5	....	....	2	....	6	....
59	Fowler	30	1	16	4	1	5	3	....	25	1	2	....
60	Gouverneur	52	2	14	2	....	8	8	....	58	....	1	....
23	*Gouverneur, village*	80	7	51	5	2	33	61	4	276	1	12	....
61	Hammond	23	1	18	3	....	9	....	....	....	....	10	1
24	*Hammond, village*	9	....	4	1	....	3	....	....	....	....	2	....
62	Hermon	17	1	9	....	....	4	....	....	1	....	4	....
25	*Hermon, village*	15	....	10	....	....	9	....	....	1	....	....	....
63	Hopkinton	25	1	15	3	....	11	....	....	23	....	5	....
64	Lawrence	33	1	31	3	1	17	3	....	30	....	1	....
65	Lisbon	53	2	29	1	1	18	1	....	1	....	3	....
66	Louisville	31	5	9	1	....	7	1	....	21	....	4	....
67	Macomb	28	1	10	2	....	2	....	....	3	....	7	....
68	Madrid	30	1	20	2	....	13	....	....	14	....	....	....
69	Massena	62	5	8	1	1	3	1	....	43	....	11	....
26	*Massena, village*	188	9	57	11	3	31	3	2	109	1	15	....
70	Morristown	21	1	13	1	1	11	....	....	....	....	1	....
27	*Morristown, village*	9	....	8	1	1	5	....	....	....	....	....	....
71	Norfolk	68	2	26	9	....	11	....	....	4	....	4	....
28	*Norwood, village* (77)	57	2	20	3	....	10	2	....	7	....	9	....
72	Oswegatchie	27	....	21	2	....	11	1	....	1	....	1	....
32	*Heuvelton, village*	5	....	9	....	....	6	1	....	....	....	....	....
73	Parishville	22	2	26	2	....	16	6	2	....	....	9	....
74	Piercefield	34	1	16	8	2	3	15	....	111	1	13	....
75	Pierrepont	22	1	11	2	1	2	....	....	....	....	13	....
76	Pitcairn	19	....	6	2	1	2	....	....	6	....	1	....
77	Potsdam (28)	66	1	30	8	1	11	7	....	6	....	14	....
29	*Potsdam, village*	76	6	74	15	1	41	....	....	9	....	9	....
78	Rossie	11	....	10	3	1	4	....	....	....	....	1	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

Deaths from —															
						TUBERCULOSIS				PNEUMONIA					
Whooping cough, 9		Diphtheria, 10		Influenza, 11		Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101	Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
18	*1*	*1*	....	....	...	*1*	*2*	....	....	*1*	....	....	....	*18*	*22*
33	....	19	....	1	...	9	4	1	....	1	1	3	5	55	52
....	....	....	....	....	...	....	....	....	....	....	....	....	....	......	*23*
6	*1*	*15*	*1*	....	...	*9*	*9*	*2*	....	*2*	*5*	*10*	....	*78*	*24*
....	....	*4*	*1*	....	...	*1*	....	....	....	*1*	....	*3*	*1*	*15*	*25*
....	....	*6*	*1*	....	...	*1*	....	....	....	....	....	*5*	....	*13*	*26*
13	....	13	1	....	3	6	14	....	....	....	1	4	1	45	53
8	....	....	....	....	...	*1*	....	*1*	....	*2*	*1*	*2*	....	*3*	*27*
6	*1*	*19*	....	....	...	*10*	....	....	....	....	*1*	*3*	*1*	*14*	*28*
5	....	*6*	....	*1*	*1*	*7*	*2*	*2*	....	....	*3*	*2*	*1*	*46*	*29*
25	....	2	....	....	...	4	3	....	....	....	....	6	3	20	54
1	1	1	....	....	...	....	4	....	....	3	....	....	....	19	10
....	....	....	1	....	...	....	....	....	3	....	....	....	....	......	11
104	2	90	9	17	14	69	64	7	8	29	40	103	50	1,009	44
...	1	17	....	....	3	14	7	1	2	2	7	26	9	235	01
2	....	....	....	....	...	2	2	1	....	....	3	1	2	18	50
1	....	....	....	2	...	3	1	1	1	....	1	7	4	38	51
....	....	....	....	....	...	*4*	*2*	*1*	....	....	*2*	*6*	*1*	*34*	*20*
....	....	....	....	....	...	....	*1*	....	....	....	....	....	....	*2*	*31*
....	....	1	....	....	...	....	....	....	....	....	....	1	....	2	52
23	....	4	1	....	...	....	1	....	....	....	....	....	....	11	53
....	....	....	....	....	...	....	2	....	1	....	....	1	....	13	54
....	....	9	....	....	...	2	....	....	1	....	1	3	2	19	55
....	....	*11*	*2*	....	...	....	*1*	....	....	....	*1*	....	*1*	*6*	*21*
....	....	....	....	....	...	....	....	....	....	1	....	....	....	4	56
1	....	2	....	....	...	1	....	....	....	1	....	....	....	12	57
....	....	*1*	....	....	...	....	....	....	....	....	....	....	....	*7*	*22*
....	....	5	2	....	...	....	....	....	....	....	3	....	1	9	58
....	....	....	....	....	...	2	2	....	....	1	....	....	....	12	59
1	....	....	....	....	...	1	1	....	....	....	....	....	2	11	60
21	....	*2*	*1*	....	...	*4*	*4*	....	*1*	*1*	*1*	*1*	*2*	*35*	*23*
....	....	....	....	....	1	....	....	....	....	....	1	1	....	14	61
....	....	....	....	....	...	....	....	....	....	....	....	....	....	*4*	*24*
....	....	....	....	....	...	....	1	....	....	....	....	....	....	7	62
....	....	....	....	....	...	....	....	....	....	*1*	....	....	....	*7*	*25*
....	....	....	....	4	...	....	....	....	....	....	2	....	1	11	63
....	....	1	....	11	1	....	....	....	....	1	....	1	....	28	64
....	....	....	....	....	...	2	1	....	....	1	....	3	....	24	65
....	....	3	....	....	...	1	....	....	....	....	1	3	....	5	66
....	....	....	....	....	...	1	2	....	....	....	1	....	....	7	67
1	....	1	....	....	2	1	....	....	....	1	1	2	....	14	68
....	....	2	....	....	...	....	....	....	....	....	....	2	....	6	69
7	....	*4*	....	....	*2*	*10*	*3*	*1*	....	....	.... *2*	*6*	*1*	*40*	*26*
....	....	....	....	....	...	....	....	....	....	....	....	4	....	*9*	*70*
....	....	....	....	....	...	....	....	....	....	*1*	....	*1*	....	*6*	*27*
3	....	2	....	....	...	7	2	1	....	1	1	2	1	19	71
6	....	*7*	*1*	....	...	*2*	*1*	....	*1*	*3*	....	*1*	*1*	*12*	*28*
....	....	2	....	....	1	1	2	....	....	1	1	1	....	15	72
....	....	....	....	....	...	*1*	*1*	....	....	....	....	1	....	*7*	*32*
....	....	1	....	....	...	....	1	1	....	1	1	1	1	19	73
24	....	10	1	....	...	1	....	....	....	....	....	....	5	9	74
....	....	....	....	....	2	....	....	....	....	....	1	2	1	5	75
10	....	....	....	....	...	....	....	....	....	....	1	....	....	5	76
1	....	....	....	....	...	....	....	....	....	1	....	4	4	21	77
1	....	....	....	....	*1*	*4*	*3*	....	....	*1*	*1*	*7*	*4*	*57*	*29*
2	1	5	1	....	...	....	....	....	....	....	....	....	2	6	78

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	ST. LAWRENCE CO.—(*Concl'd*)												
79	Russell	39	1	30	5	2	17	1	....	2	....	....	....
80	Stockholm	56	4	37	8	1	22	....	....	6	....	9	....
81	Waddington	25	2	14	4	....	9	....	....	21	....	2	....
30	*Waddington, village*	*13*	....	*8*	*2*	....	*5*	....	....	*4*	....	....	....
10	**St. Lawrence State Hospital**	....	1	160	....	....	96	1	....	....	....	....	1
45	SARATOGA COUNTY	1,145	42	860	89	46	417	53	....	1,427	16	111	4
01	**Saratoga Springs, city**	275	9	270	15	10	133	3	....	438	1	9	2
02	**Mechanicville, city**	174	4	82	12	8	38	33	....	384	5	67	2
50	Ballston	17	....	21	....	2	12	....	....	51	1	2	....
20	*Ballston Spa, village (61)*	*55*	*7*	*55*	*1*	*2*	*31*	....	....	*69*	....	*3*	....
51	Charlton	24	....	14	5	....	7	....	....	18	....	11	....
52	Clifton Park	21	....	12	2	....	8	....	....	12	....	....	....
53	Corinth	33	1	13	1	....	8	5	....	1	....	....	....
21	*Corinth, village*	*50*	*3*	*28*	*8*	*2*	*8*	*2*	....	....	....	....	....
54	Day	17	....	7	1	....	4	....	....	5	....	....	....
55	Edinburg	15	1	10	2	....	6	....	....	3	....	....	....
56	Galway	15	....	13	1	....	11	....	....	3	1	3	....
22	*Galway, village*	*2*	....	....	....	....	....	....	....	1	....	....	....
57	Greenfield	31	1	16	2	1	10	....	....	14	....	....	....
58	Hadley	11	1	6	1	....	3	....	....	55	1	....	....
59	Halfmoon	25	1	15	2	2	7	2	....	8	....	3	....
60	Malta	14	1	12	....	....	5	....	....	41	....	2	....
61	Milton (20)	30	2	38	4	2	22	....	....	27	1	1	....
62	Moreau	26	1	27	1	1	6	....	....	21	....	....	....
24	*South Glens Falls, village*	*31*	*1*	*27*	*4*	*1*	*14*	*4*	....	*30*	....	....	....
63	Northumberland	23	....	10	3	....	5	....	....	14	....	....	....
64	Providence	11	....	21	2	....	5	....	....	....	....	....	....
65	Saratoga	16	....	14	1	1	9	2	....	2	....	....	....
25	*Schuylerville, village*	*34*	*2*	*16*	*3*	....	*8*	....	....	*6*	....	....	....
26	*Victory Mills, village*	*12*	....	*8*	....	....	*7*	....	....	....	....	....	....
66	Saratoga Springs*	....	....	....	....	....	....	....	....	....	....	....	....
67	Stillwater (23)	83	....	41	10	8	14	....	....	94	5	10	....
27	*Stillwater, village*	*10*	....	*12*	....	....	*7*	....	....	*108*	....	....	....
68	Waterford	38	....	21	2	5	8	1	....	....	....	....	....
28	*Waterford, village*	*42*	*5*	*36*	*4*	*1*	*12*	....	....	*1*	....	....	....
69	Wilton	10	2	15	2	....	9	1	....	21	1	....	....
46	SCHENECTADY COUNTY	2,220	79	1,101	142	50	461	36	7	648	3	289	10
01	**Schenectady, city**	1,841	71	883	118	41	365	28	5	367	3	283	10
50	Duanesburg	31	....	32	1	....	20	....	....	7	....	7	....
51	Glenville	48	....	63	2	1	24	....	....	19	....	12	....
20	*Scotia, village*	*67*	*4*	*28*	*3*	*1*	*12*	*1*	*1*	*147*	....	*19*	....
52	Niskayuna	47	....	23	2	....	14	4	....	24	....	6	....
53	Princetown	7	....	5	....	....	3	....	....	4	....	2	....
54	Rotterdam	179	4	67	16	7	23	3	1	80	....	40	....
47	SCHOHARIE COUNTY	375	16	313	21	2	223	4	....	166	1	60	2
50	Blenheim	9	2	8	1	....	7	....	....	1	....	....	....
51	Broome	14	....	13	1	....	12	....	....	....	....	....	....
52	Carlisle	20	....	9	2	....	6	....	....	1	....	....	....
53	Cobleskill	41	1	16	....	....	11	....	....	3	....	1	....
20	*Cobleskill, village*	*31*	*1*	*25*	*2*	....	*15*	....	....	*6*	....	*1*	....
54	Conesville	13	....	10	1	....	5	....	....	....	....	8	....
55	Esperance	5	1	18	2	....	13	....	....	4	....	....	....
21	*Esperance, village*	*4*	....	*7*	....	....	*5*	....	....	....	....	....	....
56	Fulton	22	1	16	1	....	11	....	....	10	....	....	....
57	Gilboa	21	....	22	1	....	15	....	....	4	....	3	1
58	Jefferson	21	2	12	1	....	9	....	....	33	....	4	....
59	Middleburg	22	2	23	1	....	19	....	....	3	....	....	....

* Disorganized, included in city of

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921 — (Continued)**

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32-37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	....	....	....	...	1	2	....	....	2	....	1	3	22	79
....	....	....	....	....	...	4	2	....	....	1	1	4	2	27	80
....	....	....	....	....	1	....	....	....	....	....	....	1	....	12	81
....	....	....	....	....	...	....	....	....	....	....	....	....	....	*8*	*30*
....	....	....	....	....	...	....	19	....	1	7	6	5	....	121	10
281	2	49	3	56	3	99	65	9	7	31	24	63	18	624	45
221	....	13	1	43	1	31	13	5	4	6	6	22	7	207	01
9	....	2	....	4	...	17	2	4	1	4	3	5	1	59	02
2	....	1	....	....	...	1	1	....	1	....	....	2	....	16	50
6	....	....	....	....	...	*10*	*5*	*1*	....	*2*	*2*	*8*	....	*38*	*20*
6	....	....	....	5	...	1	2	....	....	....	2	....	1	9	51
....	....	....	....	....	...	....	....	....	....	....	....	1	1	10	52
....	....	....	....	....	...	2	....	....	....	....	1	1	1	10	53
3	....	....	....	....	...	....	*1*	....	....	*2*	*1*	....	....	*24*	*21*
....	....	....	....	....	1	....	....	....	....	....	....	1	1	4	54
....	....	....	....	....	...	4	2	....	....	1	....	2	....	5	55
1	1	....	....	....	...	6	1	....	....	....	....	....	....	10	56
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	*22*
....	....	....	....	....	...	1	....	....	....	....	2	....	....	14	57
....	....	....	....	....	...	....	1	....	....	1	....	....	....	8	58
1	....	1	....	....	...	1	2	....	....	1	....	....	....	12	59
....	....	....	....	4	1	2	1	....	....	....	....	1	....	9	60
4	....	2	....	....	...	....	1	....	1	3	2	4	1	25	61
....	....	....	....	....	...	3	9	....	....	....	....	2	....	15	62
....	....	*18*	....	....	...	*4*	*1*	....	....	*1*	....	*3*	*1*	*21*	*24*
....	....	....	....	....	...	....	....	....	....	....	....	1	....	9	63
....	....	5	....	....	...	....	17	....	....	1	....	....	1	2	64
....	....	....	....	....	...	1	1	....	....	3	....	....	....	10	65
2	....	*3*	....	....	...	....	....	....	....	*2*	....	*1*	....	*13*	*25*
....	....	....	....	....	...	*3*	....	....	....	....	*1*	*1*	....	*6*	*26*
....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	66
13	1	....	....	....	...	3	....	....	....	1	3	1	3	27	67
....	....	....	....	....	...	*1*	....	....	....	....	....	*1*	....	*11*	*27*
1	....	3	2	....	...	1	1	....	....	3	1	....	....	14	68
1	....	*1*	....	....	...	*7*	*4*	....	....	....	....	*5*	....	*27*	*28*
11	....	....	....	....	...	....	....	....	....	....	....	....	....	14	69
569	3	351	14	4	6	127	69	15	18	30	33	83	12	813	46
497	3	298	13	4	2	105	33	12	12	27	32	75	9	655	01
....	....	....	....	....	2	3	2	....	....	....	....	....	....	28	50
4	....	30	....	....	2	....	26	....	4	1	1	1	....	28	51
13	....	*4*	....	....	...	....	*1*	....	*1*	....	....	*2*	*1*	*22*	*20*
3	....	1	....	....	...	5	....	....	....	1	....	2	....	20	52
....	....	....	....	....	...	....	1	....	....	....	....	....	....	4	53
52	....	18	1	....	...	14	6	3	1	1	....	3	2	52	54
7	1	6	1	2	...	13	11	1	1	8	7	34	2	243	47
....	....	....	....	....	...	....	....	....	....	....	....	1	....	7	50
....	....	....	....	....	...	....	....	....	....	1	1	4	....	7	51
....	....	....	....	....	...	....	....	....	....	1	....	....	1	7	52
....	....	....	....	....	...	....	1	....	....	....	....	2	....	13	53
....	....	....	....	....	...	*1*	*1*	....	....	*1*	....	*2*	....	*19*	*20*
....	....	....	....	....	...	....	1	....	....	....	....	2	....	7	54
....	....	....	....	....	...	1	2	....	....	....	1	2	....	13	55
....	....	....	....	....	...	*1*	*1*	....	....	....	....	*1*	....	*5*	*21*
....	....	....	1	....	...	3	1	....	....	1	....	1	....	12	56
....	....	....	....	1	...	2	....	....	1	....	1	1	1	16	57
....	....	....	....	....	...	1	1	....	....	1	....	....	....	10	58
....	....	....	....	....	...	1	1	....	....	....	2	2	....	18	59

Saratoga Springs

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	SCHOHARIE CO.— (*Concluded*)												
22	*Middleburg, village*	*12*	*2*	*18*	*1*	....	*15*	....	....	....	....	*1*	....
60	Richmondville	20	1	14	1	2	9	1	....	12	....	3	1
23	*Richmondville, village*	*6*	....	*14*	....	....	*11*	*2*	....	*3*	....	*8*	....
61	Schoharie	21	....	16	2	....	7	....	....	....	....	....	....
24	*Schoharie, village*	*14*	....	*20*	*2*	....	*13*	....	....	....	....	....	....
62	Seward	19	1	16	....	....	13	1	....	....	....	1	....
63	Sharon	20	1	9	1	....	6	....	....	....	....	....	....
25	*Sharon Springs, village*	*7*	*1*	*11*	....	....	*7*	....	....	....	....	....	....
64	Summit	20	....	10	....	....	9	....	....	77	1	30	....
65	Wright	13	....	8	1	....	7	....	....	10	....	....	....
48	SCHUYLER COUNTY	269	7	240	11	2	170	5	....	58	....	10	....
50	Catherine	13	....	13	1	....	10	....	....	16	....	....	....
20	*Odessa, village*	*8*	....	*8*	*1*	....	*6*	....	....	*21*	....	....	....
51	Cayuta	4	....	6	....	....	4	....	....	....	....	....	....
52	Dix	23	1	12	1	....	9	1	....	1	....	5	....
21	*Watkins, village (56)*	*67*	*4*	*60*	*3*	....	*39*	....	....	*1*	....	*1*	....
53	Hector	47	1	57	1	2	42	1	....	11	....	....	....
22	*Burdett, village*	*3*	....	*6*	....	....	*5*	*1*	....	*1*	....	....	....
54	Montour	5	....	10	1	....	7	....	....	6	....	....	....
23	*Montour Falls, village*	*37*	....	*22*	*1*	....	*13*	*2*	....	*1*	....	*1*	....
55	Orange	21	....	17	....	....	13	....	....	....	....	1	....
56	Reading (21)	19	1	15	1	....	9	....	....	....	....	....	....
57	Tyrone	22	....	14	1	....	13	....	....	....	....	2	....
49	SENECA COUNTY	412	13	555	40	3	319	35	6	296	....	98	....
50	Covert	20	....	18	2	....	11	5	2	3	....	3	....
20	*Interlaken, village*	*4*	....	*10*	....	....	*3*	*2*	....	*2*	....	....	....
51	Fayette	26	....	23	2	....	14	....	....	62	....	9	....
21	*Waterloo, village (59)*	*61*	*5*	*55*	*6*	....	*26*	*2*	*1*	*57*	....	*4*	....
52	Junius	15	....	8	1	....	5	4	2	10	....	....	....
53	Lodi	18	1	10	2	....	4	....	....	19	....	4	....
54	Ovid	25	....	18	3	....	11	3	....	1	....	5	....
22	*Ovid, village*	*6*	....	*11*	....	....	*7*	....	....	....	....	....	....
55	Romulus	31	1	19	6	....	8	2	....	8	....	10	....
56	Seneca Falls	7	....	13	....	....	11	....	....	12	....	3	....
23	*Seneca Falls, village*	*142*	*4*	*95*	*14*	*2*	*55*	7	....	*85*	....	*50*	....
57	Tyre	7	1	10	1	....	6	....	....	3	....	2	....
58	Varick	23	....	16	3	1	10	....	....	25	....	6	....
59	Waterloo (21)	26	1	14	....	....	9	4	....	9	....	2	....
10	Willard State Hospital	1	....	235	....	....	139	6	1	....	....	....	....
50	STEUBEN COUNTY	1,734	72	1,233	114	33	720	35	8	123	....	163	5
01	**Corning, city**	431	20	177	24	6	76	7	1	....	....	45	3
02	**Hornell, city**	314	13	227	29	5	105	4	2	98	....	28	....
50	Addison	6	....	6	1	1	2	1	....	....	....	....	....
20	*Addison, village*	*31*	....	*30*	*4*	....	*18*	*5*	*1*	....	....	*1*	....
51	Avoca	15	....	9	....	....	8	....	....	1	....	....	....
21	*Avoca, village*	*11*	....	*14*	....	*1*	*9*	....	....	....	....	*6*	*2*
52	Bath	33	1	57	4	2	31	....	....	1	....	4	....
22	*Bath, village*	*94*	*5*	*65*	*5*	....	*33*	*2*	....	*4*	....	*1*	....
23	*Savona, village*	*7*	....	*17*	....	*1*	*15*	....	....	....	....	*4*	....
53	Bradford	16	1	10	1	....	5	....	....	....	....	7	....
54	Cameron	15	....	10	....	1	6	....	....	....	....	....	....
55	Campbell	19	1	16	2	2	7	....	....	....	....	4	....
56	Canisteo	21	....	13	4	....	6	....	....	....	....	....	....
24	*Canisteo, village*	*44*	*2*	*38*	*2*	....	*28*	....	....	....	....	*1*	....
57	Caton	20	....	9	2	....	6	....	....	....	....	....	....
58	Cohocton	34	3	17	3	2	10	1	....	1	....	5	....
25	*Cohocton, village*	*12*	....	*8*	*1*	....	*5*	....	....	....	....	....	....
59	Corning	54	5	27	2	1	12	....	....	3	....	....	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	1	....	....	....	....	1	....	....	....	....	1	....	16	22
....	....	....	....	....	....	....	....	....	....	....	....	....	....	13	60
....	....	....	....	....	....	1	....	....	....	....	....	2	....	12	23
6	1	2	....	....	....	....	1	....	....	1	....	1	....	12	61
....	....	....	....	....	1	1	....	1	....	1	....	4	....	14	24
....	....	....	....	....	....	....	....	....	....	....	....	2	....	14	62
1	....	3	....	....	....	....	....	....	....	....	1	2	....	6	63
....	....	....	....	....	....	....	....	....	....	....	....	....	....	11	25
....	....	....	....	....	....	1	....	....	....	....	1	3	....	5	64
....	....	....	....	....	....	....	....	....	....	1	....	1	....	6	65
144	1	4	....	....	1	10	8	4	....	1	3	19	1	206	43
....	....	....	....	....	....	1	1	....	....	1	....	....	....	11	50
....	....	....	....	....	....	....	....	....	....	....	....	1	....	7	20
3	....	....	....	....	....	....	....	....	....	....	....	1	....	5	51
11	....	....	....	....	....	....	....	....	....	....	....	4	....	8	52
41	....	1	....	....	....	2	2	....	....	....	2	4	....	62	21
29	....	1	....	....	1	2	1	2	....	....	1	3	1	50	53
1	....	....	....	....	....	1	....	....	....	....	....	....	....	6	22
2	....	....	....	....	....	1	....	....	....	....	....	2	....	8	54
22	....	1	....	....	....	2	2	2	....	....	....	3	....	17	23
24	....	....	....	....	....	1	1	....	....	....	....	....	....	16	55
7	1	1	....	....	....	....	1	....	....	....	....	....	....	13	56
4	....	....	....	....	....	....	....	....	....	....	....	1	....	13	57
90		31	....	3	1	18	68	3	8	11	10	33	9	403	49
13	....	....	....	....	....	2	1	....	....	....	....	....	....	15	50
2	....	2	....	....	....	....	3	....	....	....	....	....	....	7	20
21	....	....	....	....	....	2	2	....	1	....	....	2	....	18	51
1	....	....	....	....	....	1	1	1	1	....	....	6	1	45	21
6	....	....	....	....	....	....	....	....	....	....	....	....	....	6	52
14	....	....	....	....	....	1	....	....	....	....	....	1	1	8	53
11	1	7	....	....	....	1	1	....	....	1	....	2	....	13	54
....	....	....	....	....	....	1	2	....	....	....	....	3	....	6	22
1	....	2	....	....	....	2	....	....	....	....	....	2	2	15	55
3	....	....	....	....	....	3	....	....	....	....	....	1	....	12	56
5	....	17	....	3	1	4	2	1	1	2	2	11	3	73	23
....	....	....	....	....	....	....	....	....	....	....	2	....	....	8	57
8	....	1	....	....	....	1	....	....	....	....	1	3	2	10	58
5	....	1	....	....	....	....	2	1	....	....	....	2	....	10	59
....	....	1	....	....	....	....	54	....	5	11	5	5	....	154	10
318	8	70	5	15	4	97	53	9	5	32	43	101	19	950	50
29	2	21	....	1	..	33	9	2	1	6	7	12	6	130	01
166	....	8	2	1	2	27	6	5	1	10	3	19	1	181	02
....	....	....	....	....	....	....	....	....	....	1	....	....	1	4	50
....	....	1	....	....	....	....	2	....	....	1	1	3	....	22	20
....	....	....	....	....	....	1	....	....	....	....	....	....	....	9	51
....	....	....	....	....	....	....	1	....	....	....	2	1	....	8	21
6	1	....	....	....	....	5	12	....	....	2	5	3	1	33	52
28	....	1	....	....	....	7	1	....	....	2	3	5	....	54	22
2	....	....	....	....	....	2	2	....	....	....	....	1	1	13	23
21	1	....	....	....	....	3	2	....	....	....	....	....	....	7	53
1	....	....	....	....	....	1	1	....	....	....	....	1	....	8	54
....	....	....	....	....	....	....	....	....	....	....	....	....	2	14	55
1	....	2	....	....	....	1	....	....	....	....	....	....	....	13	56
....	....	....	....	....	....	....	....	....	....	2	....	6	....	30	24
....	....	....	....	....	....	....	....	....	....	....	....	2	....	7	57
....	....	1	....	1	1	....	....	....	....	....	....	1	1	14	58
....	....	....	....	....	....	....	1	....	....	....	1	1	....	6	25
3	2	1	....	....	....	4	2	1	....	1	....	....	....	22	59

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	STEUBEN CO.— (*Concluded*)												
32	*South Corning, village*	4	....	2	....	....	....	....	....	....	....	....	....
60	Dansville	25	....	9	4	....	4	....	....	....	....	....	....
61	Erwin	25	....	16	1	2	11	....	1	....	....	1	....
26	*Painted Post, village*	50	1	19	1	1	10	3	....	2	....	7	....
62	Fremont	9	1	7	....	....	5	....	....	....	....	....	....
63	Greenwood	19	2	9	1	1	3	....	....	....	....	....	....
64	Hartsville	8	....	5	....	....	4	....	....	....	....	....	....
65	Hornby	14	1	8	1	2	3	....	....	....	....	4	....
66	Hornellsville	74	4	71	3	....	39	....	....	4	....	....	....
31	*Arkport, village*	9	....	5	....	....	5	....	....	....	....	....	....
67	Howard	21	2	13	3	....	6	....	....	....	....	1	....
68	Jasper	24	....	15	2	....	9	6	2	2	....	1	....
69	Lindley	25	....	12	2	1	7	1	1	....	....	....	....
70	Prattsburg	18	....	8	1	....	5	1	....	....	....	1	....
27	*Prattsburg, village*	16	....	18	....	....	15	....	....	....	....	....	....
71	Pulteney	12	....	19	1	....	14	....	....	1	....	5	....
72	Rathbone	16	....	9	1	1	5	....	....	....	....	....	....
73	Thurston	14	....	6	....	....	2	....	....	....	....	7	....
74	Troupsburg	18	1	8	....	1	6	3	....	....	....	....	....
75	Tuscarora	15	1	9	1	....	4	....	....	3	....	3	....
76	Urbana	15	....	14	3	....	9	....	....	....	....	6	....
28	*Hammondsport, village*	8	2	16	1	....	11	....	....	....	....	1	....
77	Wayland	29	1	11	....	1	7	....	....	....	....	2	....
29	*Wayland, village*	28	....	17	1	1	7	1	....	3	....	18	....
78	Wayne	8	1	7	....	....	4	....	....	....	....	....	....
79	West Union	18	....	7	2	....	4	....	....	....	....	....	....
80	Wheeler	11	2	13	....	....	12	....	....	....	....	....	....
81	Woodhull	21	2	6	1	....	4	....	....	....	....	....	....
30	*Woodhull, village*	3	....	4	....	....	4	....	....	....	....	....	....
10	New York State Soldiers' and Sailors' Home, Bath	....	....	120	....	....	119	....	....	....	....	....	....
51	SUFFOLK COUNTY	2,325	76	2,145	147	52	952	79	6	96	....	154	6
50	Babylon	118	4	69	6	6	39	....	....	....	....	2	1
20	*Amityville, village*	35	....	113	2	3	63	....	....	....	....	....	....
21	*Babylon, village*	67	4	54	6	1	23	3	....	2	....	2	1
51	Brookhaven	336	8	236	21	7	137	21	1	27	....	38	2
22	*Bellport, village*	2	....	4	1	....	3	....	....	....	....	....	....
23	*Patchogue, village*	81	....	41	6	....	20	....	....	1	....	5	....
28	*Shoreham, village*	....	....	1	....	....	....	....	....	....	....	....	....
52	Easthampton	65	....	30	5	....	15	....	....	17	....	13	....
24	*Sag Harbor, village (58)*	52	1	38	3	3	21	....	....	....	....	....	....
32	*East Hampton, village*	26	1	20	....	1	12	....	....	....	....	....	....
53	Huntington	357	15	174	14	1	86	28	4	31	....	20	1
25	*Northport, village*	22	2	25	1	....	16	7	....	1	....	....	....
54	Islip	378	8	215	19	17	98	3	....	5	....	21	1
29	*Brightwaters, village*	7	....	3	....	....	3	....	....	....	....	....	....
55	Riverhead	150	4	56	9	4	35	....	....	....	....	23	....
56	Shelter Island	14	2	6	....	....	4	....	....	....	....	3	....
57	Smithtown	82	5	40	5	....	24	10	....	9	....	1	....
58	Southampton (24)	148	4	93	12	4	46	1	....	....	....	4	....
26	*Southampton, village*	117	9	80	8	4	31	1	1	....	....	15	....
59	Southold	139	5	60	10	....	30	....	....	1	....	7	....
27	*Greenport, village*	107	4	65	12	1	23	3	....	1	....	2	....
10	Central Islip State Hospital	8	....	457	2	....	131	2	....	1	....	....	....
11	Kings Park State Hospital	14	....	280	5	....	92	....	....	....	....	....	....
52	SULLIVAN COUNTY	591	21	581	41	12	204	15	2	116	....	93	....
50	Bethel	32	....	34	....	1	16	2	....	47	....	5	....
51	Callicoon	34	....	14	1	....	6	....	....	1	....	7	....
52	Cochecton	13	....	21	4	1	12	....	....	....	....	6	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping-cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
														2	*32*
											1	1	1	6	60
5		3					1			1	1	1		11	61
6		*20*	*1*			*1*	*1*	*1*				*3*		*14*	*26*
2						1	1					3		3	62
		2	1			1	1			1	1			5	63
		2												5	64
	1													7	65
4		1				1	2			2	1	11		55	66
														5	*31*
		1	1			2					1	2		9	67
14											2	3		8	68
							1					1		9	69
						1						1	1	6	70
											2	*2*		*14*	*27*
						2	2		1		1	1	1	13	71
												1	1	7	72
							2		1			2		1	73
						1						1		7	74
										1	1	1		6	75
						1						2	1	11	76
4		*1*		*2*		*1*						*3*	*1*	*12*	*28*
8	1	2		3			1				1			8	77
11		*1*		*7*	*1*	*1*	*1*			*1*		*2*		*12*	*29*
7														7	78
		1					1				1			5	79
												1		12	80
		1												6	81
											1			*3*	*30*
									1	1	7	4		107	10
388	8	242	23	110	18	128	182	23	14	64	71	147	16	1,593	51
1			2							3	2	6	1	54	50
							2			*1*	*2*	*4*		*104*	*20*
25	*1*	*23*	*1*			*2*	*2*			*2*	*1*	*6*	*2*	*38*	*21*
8		18	2	6		14	30	2	3	7	11	20	3	157	51
											1			*3*	*22*
3		*6*		*8*		*20*	*3*	*4*		*6*		*4*		*29*	*23*
														1	*28*
33		3			1	2	1			1	1	1		25	52
23	*3*					*2*	*2*			*2*		*6*		*25*	*24*
											2			*18*	*32*
3		12			1	15	9	1	2	3	9	19	3	123	53
2						*4*		*1*	*1*	*2*	*1*	*3*		*18*	*25*
153	1	104	8	82	6	27	7	5	2	3	6	26	2	153	54
														3	*29*
9		38	5		1	11	2	2		1	2	2	1	42	55
		1												6	56
15		3	2			8	2	2			1	1	1	33	57
58	2	8		1	2	4	4	2			3	7	1	74	58
49	*1*	*9*	*1*		*1*	*9*	*1*	*2*	*2*		*1*	*5*		*67*	*26*
2		5	1		1	5	2			2	1	4	2	47	59
		7	*1*		*1*	*4*	*2*	*2*			*3*	*7*		*39*	*27*
		5		13	4	1	75		2	14	12	10		340	10
4							38		2	18	12	16		194	11
103		43	3	2	4	690	204	54	4	14	10	32	8	300	52
		6				2	4			1	1	1		27	50
2		2				7	2					1		11	51
11		2				12	1					4		16	52

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	DEATHS AT AGE OF — Under 1 year	DEATHS AT AGE OF — 1-4 years	DEATHS AT AGE OF — 60 years and over	CASES AND — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles, 7 — Cases	Measles, 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
	SULLIVAN CO.— (*Concluded*)												
53	Delaware	31		27	3		15			7		4	
54	Fallsburgh	73	3	45	4	2	19	2		24		8	
23	*Woodridge, village*	*26*		*11*	*2*	*1*	*8*			*2*		*6*	
55	Forestburg	3		5	1		3			10			
56	Fremont	24		16	1		8			8		3	
57	Highland	15	1	17	1		6	2				6	
58	Liberty	84	3	114	6	4	18	2		1		7	
20	*Liberty, village*	*34*	*5*	*85*	*1*		*9*	*4*				*7*	
59	Lumberland	10	1	5			4						
60	Mamakating	31		38	3	1	21			2		2	
21	*Wurtsboro, village*	*5*		*6*	*1*		*1*					*3*	
61	Neversink	29	2	24	4	1	11						
62	Rockland	55	3	31	4		11	3	2	8		18	
63	Thompson	38	2	36	3		19			3		3	
22	*Monticello, village*	*42*	*1*	*38*	*1*		*18*			*3*		*3*	
64	Tusten	13		11	1	1	5					5	
53	TIOGA COUNTY	432	14	41	30	11	286	13	4	104	3	37	2
50	Barton	27		29			23		1	2		3	
20	*Waverly, village*	*87*	*4*	*72*	*7*	*1*	*49*	*3*		*2*		*17*	*1*
51	Berkshire	15	1	8			3			9			
52	Candor	37	1	36	4		22		1	1		1	
21	*Candor, village*	*9*		*19*			*17*	*1*					
53	Newark Valley	19	1	13	1		10			10		1	
22	*Newark Valley, village*	*15*		*24*	*2*		*16*					*3*	
54	Nichols	33	1	16	2	3	8			16	3	1	1
23	*Nichols, village*	*11*		*10*		*1*	*6*	*1*				*1*	
55	Owego	63	1	45	2		38			14		2	
24	*Owego, village*	*87*	*3*	*88*	*8*	*3*	*50*	*4*	*1*	*38*		*5*	
56	Richford	17		12			10	1				3	
57	Spencer	20		14	2	1	10			9			
25	*Spencer, village*	*12*		*16*	*1*		*15*						
58	Tioga	32	2	20	1	2	14	3	1	3			
54	TOMPKINS COUNTY	72	26	53	51	12	311	31	3	374	1	77	
01	**Ithaca, city**	416	15	26	2	8	132	17	3	262		60	
50	Caroline	33	2	16	1	1	10			1			
51	Danby	26		17			14	4		5		2	
52	Dryden	37	1	24	2		16	3		18		3	
20	*Dryden, village*	*6*		*12*	*1*		*11*						
21	*Freeville, village*	*7*		*7*	*1*		*6*	*1*					
53	Enfield	7		13	1		12			14		1	
54	Groton	39	1	26	3	1	15			1		2	
22	*Groton, village*	*44*	*1*	*20*			*13*	*1*		*7*		*3*	
55	Ithaca	25		19	1	1	7	1		15		4	
25	*Cayuga Heights, village*			*1*			*1*			*6*			
56	Lansing	45	1	35	6	1	21	2		38	1	1	
57	Newfield	18		23	6		11	1					
23	*Newfield, village*	*4*	*1*	*4*			*2*						
58	Ulysses	15		36			22	1		5		3	
24	*Trumansburg, village*	*8*		*14*	*1*		*12*			*2*			
55	ULSTER COUNTY	1,436	50	1,144	102	34	559	38	7	345		145	6
01	**Kingston, city**	565	19	465	42	9	196	21	5	14		51	4
50	Denning	5		3	1		2	1					
51	Esopus	59	1	45	3		18			1			
20	*Rifton, village*												
52	Gardiner	20		12	2		7			20		2	
53	Hardenburg	8		5		1	3			1			
54	Hurley	12		10	1		6						
55	Kingston	6	1	1									
56	Lloyd	81	3	38	1	1	22	1		11		6	

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary and acute miliary, 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
21	....	7	1	....	1	8	4	1	....	1	....	1	1	18	53
15	....	3	....	....	....	43	2	1	2	....	....	3	1	37	54
3	....	*2*	....	....	....	*7*	*4*	*1*	....	....	....	....	....	*7*	*23*
....	....	....	....	....	....	....	....	....	....	....	1	....	....	4	55
....	....	3	1	....	....	2	4	....	....	3	....	....	....	8	56
....	....	1	....	....	....	2	2	....	....	....	2	1	....	12	57
9	....	6	1	....	1	156	78	9	1	3	3	1	1	25	58
3	....	*2*	....	*2*	*1*	*305*	*70*	*31*	....	....	....	*1*	....	*16*	*20*
....	....	....	....	....	1	....	1	....	....	....	....	....	....	3	59
2	....	2	....	....	....	4	5	1	....	2	3	3	2	23	60
....	....	....	....	....	....	....	*3*	....	....	....	....	*1*	*1*	*1*	*21*
16	....	....	....	....	....	9	3	....	....	1	....	2	....	18	61
19	....	6	....	....	....	7	2	2	1	....	....	4	1	21	62
6	....	1	....	....	....	56	8	3	....	1	....	2	1	24	63
1	....	....	....	....	....	*65*	*11*	*3*	....	....	....	*6*	....	*22*	*22*
....	....	....	....	....	....	5	....	2	....	2	....	2	....	7	64
16	1	64	6	1	4	14	7	....	....	12	22	29	4	321	53
....	....	....	....	....	....	....	....	....	....	....	2	1	....	25	50
....	....	*4*	*1*	....	*3*	*6*	*4*	....	....	*2*	*7*	*4*	*2*	*48*	*20*
....	....	....	....	....	....	....	....	....	....	....	....	1	....	7	51
5	....	5	....	....	1	....	....	....	....	2	1	5	....	26	52
1	....	*1*	....	....	....	*1*	*1*	....	....	....	*2*	....	....	*16*	*21*
5	....	4	....	....	....	1	....	....	....	....	1	....	1	11	53
....	....	*4*	....	....	....	....	....	....	....	....	*2*	*2*	....	*20*	*22*
....	....	10	1	....	....	....	....	....	....	....	....	1	....	10	54
....	....	....	....	....	....	....	....	....	....	....	....	*2*	....	*8*	*23*
2	1	6	....	....	....	4	....	....	....	....	2	1	....	41	55
....	....	*26*	*4*	....	....	....	....	....	....	*1*	*1*	*9*	*1*	*65*	*24*
....	....	....	....	....	....	....	....	....	....	1	1	....	....	10	56
....	....	....	....	....	....	1	1	....	....	2	1	1	....	9	57
....	....	....	....	....	....	....	....	....	....	*4*	*1*	*1*	....	*9*	*25*
3	....	4	....	1	....	2	1	....	....	....	1	1	....	16	58
37	1	116	3	4	6	31	25	8	8	15	21	42	10	400	54
13	1	112	2	1	2	23	4	4	6	5	19	27	5	194	01
....	....	1	....	....	....	2	1	....	....	1	....	....	1	13	50
....	....	1	....	....	1	....	1	....	....	....	....	....	....	15	51
....	....	....	....	....	....	....	....	....	....	1	....	1	1	21	52
....	....	....	....	....	*1*	*1*	....	....	....	*1*	....	*5*	....	*5*	*20*
....	....	....	....	....	....	*1*	....	....	....	....	....	....	....	*7*	*21*
....	....	....	....	....	....	8	....	....	....	1	....	....	....	12	53
....	....	....	....	....	....	....	1	....	....	1	1	6	....	17	54
2	....	....	....	....	....	....	*1*	*1*	....	*1*	*1*	....	....	*17*	*22*
....	....	2	1	....	....	....	2	1	....	1	....	....	....	15	55
....	....	....	....	....	....	....	....	....	....	....	....	....	....	*1*	*25*
....	....	....	....	....	1	....	1	1	1	1	....	1	1	28	56
....	....	....	....	....	....	....	1	....	....	1	....	2	2	17	57
....	....	....	....	....	....	....	....	*1*	....	....	....	....	....	*4*	*23*
22	....	....	....	3	1	1	11	....	1	1	....	....	....	22	58
....	....	....	....	....	....	....	*2*	....	....	....	....	....	....	*12*	*24*
180	2	108	10	12	6	101	98	9	7	25	53	81	16	831	55
49	....	45	5	2	4	42	40	6	3	13	18	35	4	334	01
....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	50
5	1	1	....	2	....	....	10	....	....	1	1	5	....	27	51
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*20*
....	....	5	....	....	....	2	....	....	....	1	....	....	....	11	52
....	....	....	....	....	....	....	....	....	1	....	....	1	....	3	53
....	....	....	....	....	....	....	1	....	....	....	....	2	....	7	54
....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	55
74	1	3	....	....	....	4	8	....	....	....	4	4	....	26	56

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths,	DEATHS AT AGE OF — Under 1 year	1-4 years	60 years and over	CASES AND Typhoid fever, 1 Cases	Deaths	Measles, 7 Cases	Deaths	Scarlet fever, 8 Cases	Deaths
	ULSTER CO.— (*Concluded*)												
57	Marbletown	21	1	28	2	1	17	....	....	20	....	1	....
58	Marlborough	72	1	33	4	1	15	....	....	1	....	3	....
21	*Marlboro, village*	*16*	......	*13*	*2*	.....	*6*	....	....	....	....	....	....
59	New Paltz	21	......	35	....	3	25	....	....	1	....	7	....
22	*New Paltz, village*	*9*	......	*19*	*1*	*1*	*14*	....	....	*6*	....	*3*	....
60	Olive	9	......	15	....	....	12	5	1	4	....	5	1
61	Plattekill	34	......	21	1	2	13	....	....	....	....	15	1
62	Rochester	27	1	29	1	2	16	....	....	1	....	8	....
63	Rosendale	16	......	31	3	.....	17	....	....	....	....	....	....
23	*Rosendale, village*	*8*	*1*	*15*	*1*	.....	*11*	*1*	....	....	....	....	....
64	Saugerties	100	5	67	8	2	32	....	....	39	....	20	....
24	*Saugerties, village*	*84*	*7*	*55*	*8*	*1*	*25*	*1*	....	*179*	....	*1*	....
65	Shandaken	43	2	32	6	2	13	3	....	....	....	3	1
25	*Pine Hill, village*	*5*	......	*6*	....	....	*3*	....	....	*1*	....	....	....
66	Shawangunk	34	1	30	4	....	18	....	....	....	....	6	....
67	Ulster	68	2	27	4	4	6	1	....	....	....	2	1
68	Wawarsing	61	5	54	4	2	26	4	1	4	....	2	....
26	*Ellenville, village*	*41*	......	*42*	*2*	*2*	*29*	....	....	*1*	....	*3*	....
69	Woodstock	18	......	12	1	.....	7	....	....	41	....	7	....
10	Eastern New York Reformatory, Napanoch	......	......	1	....	....	....	....	....	....	....	....	....
56	WARREN COUNTY	666	33	469	49	10	246	15	2	531	4	15	....
01	Glens Falls, city	375	16	267	33	3	133	8	2	31.	1	4	..
50	Bolton	21	2	13	1	.....	7	2	....	....	....	1	....
51	Caldwell	19	......	......	....	....	....	....	....	4	....	....	....
20	*Lake George, village*	*9*	......	*7*	....	....	*3*	*1*	....	*7*	....	*3*	....
52	Chester	28	2	21	2	.....	12	....	....	14	1	....	....
53	Hague	17	......	12	2	2	4	....	....	5	....	5	....
54	Horicon	16	3	13	1	.....	9	....	....	1	....	....	....
55	Johnsburg	38	2	31	3	2	15	....	....	111	1	....	....
56	Luzerne	28	1	15	4	.....	7	....	....	44	....	....	....
57	Queensbury	45	2	36	2	2	20	....	....	12	....	2	....
58	Stony Creek	16	......	10	....	....	8	1	....	2	....	....	....
59	Thurman	15	2	8	....	....	5	2	....	12	1	....	....
60	Warrensburg	39	3	36	1	1	23	1	....	8	....	....	....
57	WASHINGTON COUNTY	858	40	621	55	19	351	20	....	1,659	8	82	...
50	Argyle	19	3	31	2	1	22	....	....	48	....	....	....
20	*Argyle, village*	*3*	......	*1*	....	....	*1*	....	....	*2*	....	....	....
51	Cambridge	9	1	15	1	.....	13	....	....	14	....	....	....
21	*Cambridge, village (65)*	*61*	*3*	*39*	*3*	.....	*21*	*1*	....	*6*	*1*	*12*	....
52	Dresden	9	1	5	....	2	2	....	....	....	....	1	....
53	Easton	22	1	16	1	.....	8	....	....	10	1	1	....
22	*Greenwich, village (57)*	*40*	......	*32*	*3*	.....	*18*	*1*	....	*127*	....	*8*	....
54	Fort Ann	39	2	26	....	1	18	....	....	51	....	1	....
23	*Fort Ann, village*	*6*	......	*9*	....	*2*	*6*	....	....	*20*	*1*	....	....
55	Fort Edward	29	3	29	4	1	11	2	..	87	1	2	..
24	*Fort Edward, village*	*93*	*4*	*52*	*6*	*2*	*24*	....	....	*32;*	*1*	*27*	....
56	Granville	38	2	35	2	.....	16	....	....	80	....	1	....
25	*Granville, village*	*63*	*4*	*42*	*5*	*1*	*20*	*1*	....	*47*	*1*	....	....
57	Greenwich (22)	51	1	28	3	2	15	1	....	36	....	2	....
58	Hampton	14	2	6	2	.....	3	....	....	34	....	14	....
59	Hartford	15	1	16	2	.....	13	....	....	....	....	....	....
60	Hebron	17	1	13	1	1	8	....	....	18	....	....	....
61	Jackson	12	......	3	....	....	3	....	....	26	....	4	....
62	Kingsbury	28	......	19	3	.....	10	2	....	25	....	....	....
26	*Hudson Falls, village*	*98*	*2*	*79*	*7*	*4*	*44*	*5*	....	*446*	*2*	*5*	....
63	Putnam	6	1	4	....	....	3	....	....	2	....	1	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping-cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS				PNEUMONIA		Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
						Pulmonary, and acute miliary 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101				
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
6	....	5	1	....	...	7	4	....	....	....	1	....	....	22	57
2	....	3	....	....	...	....	....	....	....	1	3	3	....	26	58
....	....	*3*	....	....	...	....	*1*	....	....	....	....	*1*	....	*11*	*21*
1	....	1	1	....	...	2	....	....	1	2	2	....	....	29	59
4	....	....	....	....	...	....	....	....	....	....	*1*	*2*	....	*16*	*22*
1	....	....	....	....	...	2	....	....	1	....	1	....	....	11	60
3	....	2	....	....	...	....	....	....	....	1	4	....	....	15	61
16	....	5	....	....	...	1	1	....	....	....	3	....	....	25	62
....	....	....	....	....	1	1	3	1	....	....	....	3	1	23	63
1	....	*1*	....	....	...	*2*	....	....	....	*1*	....	....	....	*14*	*23*
8	....	2	....	2	...	21	13	....	....	2	2	6	3	41	64
4	....	....	....	....	...	*4*	*5*	*1*	*1*	*1*	*4*	*7*	*2*	*35*	*24*
....	....	....	....	....	...	3	3	1	....	....	1	2	....	25	65
....	....	....	....	....	...	....	*1*	....	....	....	....	....	....	*5*	*25*
1	....	2	....	2	...	4	2	....	....	....	....	3	1	24	66
....	....	11	2	....	...	....	4	....	....	....	2	....	3	15	67
4	....	14	....	2	...	5	3	....	....	....	4	....	....	46	68
....	....	*1*	....	*1*	*1*	....	*1*	....	....	*2*	*2*	*6*	*1*	*29*	*26*
1	....	4	1	....	...	1	2	....	....	....	....	1	....	8	69
....	....	....	....	....	...	....	1	....	....	....	....	....	....	....	10
25	....	16	....	....	1	59	17	6	1	7	9	49	9	370	56
8	....	13	....	....	...	44	8	6	....	6	5	26	4	215	01
....	....	....	....	....	1	1	....	....	1	....	....	1	1	9	50
10	....	....	....	....	...	....	....	....	....	....	....	....	....	....	51
....	....	....	....	....	...	*3*	*2*	....	....	....	....	*1*	....	*4*	*20*
....	....	....	....	....	...	....	2	....	....	....	....	2	....	16	52
....	....	....	....	....	...	....	....	....	....	1	....	....	1	10	53
....	....	2	....	....	...	....	1	....	....	....	1	1	....	10	54
....	....	....	....	....	...	5	....	....	....	....	....	6	....	24	55
5	....	1	....	....	...	2	1	....	....	....	....	2	1	11	56
2	....	....	....	....	...	1	1	....	....	....	1	4	1	29	57
....	....	....	....	....	...	....	1	....	....	....	....	2	....	7	58
....	....	....	....	....	...	....	....	....	....	....	....	1	....	6	59
....	....	....	....	....	...	8	1	....	....	....	2	3	1	29	60
35	....	33	1	12	9	45	35	11	1	19	26	51	11	460	57
....	....	....	....	....	...	....	....	....	....	3	1	1	....	26	50
....	....	....	....	....	...	*1*	....	....	....	....	....	....	....	*1*	*20*
2	....	....	....	....	...	....	....	....	....	....	2	1	....	12	51
1	....	*1*	....	*3*	...	*2*	*1*	....	....	*1*	*2*	*5*	....	*29*	*21*
....	....	1	....	....	...	1	....	....	....	....	....	....	....	5	52
....	....	....	....	....	2	....	....	....	....	....	....	1	1	11	53
3	....	*7*	....	....	*1*	*6*	*1*	*1*	....	....	*1*	*2*	*1*	*26*	*22*
2	....	....	....	....	...	1	....	....	....	....	1	3	....	22	54
....	....	....	....	....	...	....	....	....	....	....	....	*2*	....	*6*	*23*
....	....	....	....	1	2	2	6	....	....	1	1	2	....	16	55
1	....	*2*	....	*1*	...	*7*	*4*	*3*	*1*	*2*	*2*	*3*	*1*	*38*	*24*
....	....	2	....	7	1	2	3	2	....	....	1	4	....	26	56
....	....	*5*	....	....	...	*3*	*7*	....	....	....	*2*	*6*	*1*	*25*	*25*
24	....	....	....	....	1	....	....	....	....	....	1	2	2	22	57
....	....	9	....	....	...	....	....	1	....	....	1	....	....	5	58
....	....	....	....	....	...	....	....	....	....	1	....	....	....	15	59
....	....	....	....	....	1	....	1	....	....	....	1	1	....	9	60
2	....	....	....	....	...	....	....	....	....	....	....	....	....	3	61
....	....	....	....	....	...	1	1	....	....	2	1	1	....	14	62
....	....	....	....	....	*1*	*6*	*4*	....	....	*4*	*4*	*10*	*4*	*50*	*26*
....	....	1	....	....	...	1	....	2	....	....	....	....	....	4	63

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	Deaths at age of — Under 1 year	Deaths at age of — 1-4 years	Deaths at age of — 60 years and over	Typhoid fever, 1 Cases	Typhoid fever, 1 Deaths	Measles, 7 Cases	Measles, 7 Deaths	Scarlet fever, 8 Cases	Scarlet fever, 8 Deaths
	WASHINGTON CO.— (*Concl'd*)												
64	Salem	18	.....	15	2	1	9	1	....	51	....	1	....
27	*Salem, village*	*9*	*1*	*16*	....	....	*12*	....	....	*115*	....	....	....
65	White Creek (21)	11	2	15	....	....	13	2	....	30	....	....	....
66	Whitehall	8	1	9	....	....	4	4	....	3	....	....	....
28	*Whitehall, village*	*140*	*4*	*65*	*8*	*1*	*33*	....	....	*57*	....	*2*	....
10	Great Meadow Prison, Comstock	.....	.....	1	....	....	1	....	....	....	....	....	....
58	WAYNE COUNTY	882	34	640	59	16	375	22	5	200	1	128	3
50	Arcadia	38	4	24	2	1	17	....	....	1	....	13	1
20	*Newark, village*	*94*	.....	*85*	*5*	*2*	*49*	....	....	*2*	....	*13*	....
51	Butler	25	.....	19	2	....	15	....	....	18	....	4	....
21	*Wolcott, village (64)*	*17*	*1*	*22*	*3*	*1*	*10*	....	....	*64*	*1*	*1*	....
52	Galen	24	1	20	2	....	12	1	....	11	....	2	....
22	*Clyde, village*	*56*	*3*	*33*	*5*	*1*	*20*	*8*	....	*68*	....	*1*	....
53	Huron	13	2	15	1	....	12	....	....	14	....	5	....
54	Lyons	31	2	14	1	....	9	1	....	....	....	6	....
23	*Lyons, village*	*91*	*3*	*70*	*6*	*4*	*37*	*3*	*2*	....	....	*9*	....
55	Macedon	38	2	24	3	....	11	1	1	....	....	3	....
24	*Macedon, village*	*9*	.....	*4*	....	....	*1*	....	....	....	....	*4*	....
56	Marion	37	2	22	6	....	11	....	....	....	....	12	....
57	Ontario	64	1	28	5	1	16	....	....	....	....	10	1
58	Palmyra	23	1	6	....	....	4	1	....	1	....	2	....
25	*Palmyra, village*	*37*	.....	*33*	*2*	....	*23*	*1*	*1*	....	....	*1*	....
59	Rose	29	1	28	1	1	17	....	....	1	....	....	....
60	Savannah	12	.....	8	1	....	4	....	....	....	....	....	....
26	*Savannah, village*	*11*	*1*	*8*	*1*	....	*5*	....	....	....	....	*2*	....
61	Sodus	76	3	55	2	....	37	4	....	2	....	8	1
28	*Sodus, village*	*6*	.....	*22*	....	*1*	*16*	....	*1*	....	....	*3*	....
62	Walworth	47	2	18	4	....	9	....	....	....	....	22	....
63	Williamson	67	.....	31	3	1	17	....	....	2	....	4	....
64	Wolcott (21)	18	2	27	2	3	17	2	....	16	....	3	....
27	*Red Creek, village*	*8*	*2*	*10*	....	....	*6*	....	....	....	....	....	....
10	Newark State Custodial Asylum	11	1	16	2	....	....	....	....	....	....	....	....
59	WESTCHESTER COUNTY	7,803	306	3,756	525	180	1,474	101	12	1,684	18	1283	23
01	**Peekskill, village**	306	13	187	22	8	83	11	....	146	2	27	....
02	**White Plains, city**	455	21	241	32	9	107	3	1	32	....	42	....
03	**Mount Vernon, city**	1,034	44	406	65	21	167	23	4	40	1	153	1
04	**New Rochelle, city**	737	35	301	45	12	113	13	2	156	1	120	1
05	**Ossining, village**	270	16	138	19	3	72	3	....	1	....	69	2
06	**Port Chester, village**	575	18	190	22	11	67	20	1	429	5	94	2
07	**Yonkers, city**	2,530	88	961	160	64	282	9	4	265	1	363	10
50	Bedford	41	2	65	5	1	32	....	....	....	....	8	....
20	*Mt. Kisco, village (58)*	*157*	*8*	*55*	*10*	....	*26*	....	....	*3*	....	*7*	*1*
51	Cortlandt	87	2	42	5	1	16	....	....	8	....	7	....
21	*Croton-on-Hudson, village*	*28*	*2*	*11*	*4*	....	*5*	....	....	*2*	....	....	....
52	Eastchester	31	4	22	1	3	11	....	....	10	....	23	....
22	*Bronxville, village*	*134*	*7*	*35*	*6*	*1*	*12*	*1*	....	*5*	....	*6*	....
23	*Tuckahoe, village*	*90*	*2*	*27*	*5*	*2*	*8*	....	....	*8*	....	*20*	....
53	Greenburgh	56	1	34	7	3	13	....	....	82	3	20	....
24	*Ardsley, village*	*7*	.....	*12*	....	*2*	*7*	....	....	*1*	....	....	....
25	*Dobbs Ferry, village*	*156*	*10*	*58*	*14*	....	*22*	....	....	*18*	....	*36*	....
26	*Hastings-on-Hudson, village*	*98*	*3*	*40*	*6*	*8*	*16*	*2*	....	*107*	*1*	*68*	*1*
27	*Irvington, village*	*23*	*1*	*19*	....	*1*	*13*	....	....	*1*	....	*7*	....
28	*Tarrytown, village*	*161*	*6*	*80*	*9*	*2*	*33*	....	....	*94*	....	*14*	*4*
29	*Elmsford, village*	*25*	*2*	*14*	*3*	*2*	*4*	*1*	....	*33*	....	....	....
54	Harrison	110	2	50	10	2	21	....	....	17	2	5	....
55	Lewisboro	17	.....	15	1	....	11	....	....	....	....	6	....

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Continued)

DEATHS FROM —

Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS: Pulmonary and acute miliary, 31, 37c		TUBERCULOSIS: Other forms, 32-37a, b		PNEUMONIA: Broncho, 100	PNEUMONIA: Lobar and unqualified, 101	Cancer, 43-49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
....	....	....	....	....	...	....	....	....	....	....	....	2	....	13	64
....	....	....	....	....	...	*1*	*1*	*1*	....	....	*1*	*1*	....	*13*	*27*
....	....	....	....	....	...	....	2	....	....	....	....	1	....	12	65
....	....	2	1	....	...	1	1	1	....	....	....	....	....	7	66
....	....	*3*	....	....	...	*10*	*3*	....	....	*4*	*4*	*3*	*1*	*50*	*28*
....	....	....	....	....	...	....	....	....	....	1	....	....	....	......	10
271	5	85	5	1	3	55	25	11	8	14	29	59	5	478	58
23	....	1	1	....	...	....	1	1	....	1	2	1	1	16	50
81	....	*4*	*1*	....	*1*	*9*	*2*	*3*	*1*	....	*3*	*10*	*1*	*64*	*20*
15	*1*	*1*	....	....	...	*4*	*1*	....	....	....	....	*1*	....	*16*	*51*
11	*1*	*4*	....	....	...	*4*	*1*	*1*	....	*1*	*1*	*3*	....	*14*	*21*
6	....	8	1	....	...	4	2	1	1	1	1	1	....	13	52
40	....	*3*	....	....	...	*9*	*5*	....	....	....	*1*	....	*1*	*26*	*22*
12	....	2	....	1	...	....	....	....	....	....	1	....	....	14	53
....	....	....	....	....	...	1	....	....	....	....	1	2	....	11	54
1	....	*20*	*1*	....	...	*5*	*1*	*1*	*2*	*3*	*4*	7	....	*50*	*23*
2	....	3	....	....	...	....	1	....	....	....	....	....	....	22	55
....	....	*3*	....	....	...	....	....	....	....	....	....	*1*	....	*3*	*24*
6	1	7	....	....	...	....	....	....	1	1	....	....	1	18	56
24	....	3	....	....	1	1	....	....	....	1	1	2	....	22	57
4	....	....	....	....	...	1	....	....	....	....	1	1	....	4	58
2	....	*5*	*1*	....	...	*1*	*2*	*2*	....	....	*1*	*4*	....	*24*	*25*
8	1	2	....	....	...	1	1	....	1	....	2	2	....	21	59
2	....	1	....	....	...	....	....	1	1	....	....	1	....	6	60
11	....	*1*	....	....	...	*1*	....	....	....	*1*	*1*	*1*	....	*5*	*26*
6	....	3	....	....	...	4	2	....	....	....	4	5	....	43	61
....	....	....	....	....	...	*3*	....	*1*	....	....	*1*	*4*	....	*16*	*28*
2	....	2	....	....	...	1	....	....	....	2	....	3	....	13	62
3	....	2	....	....	...	3	2	....	....	1	1	4	....	23	63
9	1	4	....	....	...	3	....	....	....	1	2	3	1	19	64
3	....	*6*	....	....	*1*	....	....	....	....	....	*1*	*1*	....	7	*27*
....	....	....	....	....	...	....	4	....	1	1	....	2	....	8	10
1391	22	667	28	87	18	525	272	83	36	120	193	395	96	2,523	59
140	2	35	2	5	3	27	11	5	2	2	8	17	2	136	01
150	....	25	....	5	...	32	8	5	1	5	16	24	2	184	02
187	4	112	3	38	2	57	19	11	3	26	19	43	11	270	03
120	1	44	3	3	2	43	13	5	3	12	19	23	7	214	04
6	1	46	1	2	...	16	2	3	5	1	3	11	1	111	05
17	....	43	3	2	2	25	4	6	1	3	5	14	3	147	06
231	5	178	12	6	3	197	91	33	14	30	58	80	33	620	07
50	....	7	....	1	...	3	15	....	....	4	....	5	....	41	50
27	....	*4*	....	....	...	*11*	*2*	....	....	*3*	*3*	*5*	*1*	*40*	*20*
18	1	9	1	1	...	5	3	1	....	....	2	3	3	29	51
1	....	*3*	....	....	...	*1*	....	*1*	....	....	*1*	....	....	*10*	*21*
33	....	23	1	3	...	5	....	....	....	1	1	3	1	15	52
43	....	*6*	....	*3*	*1*	*3*	....	....	....	....	....	*1*	....	*33*	*22*
55	*1*	*4*	....	*7*	...	*9*	*1*	*1*	*1*	....	*3*	*1*	....	*20*	*23*
40	1	12	1	....	...	4	1	....	....	....	1	6	....	21	53
1	....	*1*	....	....	...	*1*	*1*	....	....	*1*	....	*4*	....	*6*	*24*
35	*1*	*10*	....	....	...	*2*	*1*	*1*	....	*1*	*5*	*4*	*2*	*44*	*25*
14	....	*20*	*1*	....	...	*6*	*2*	*2*	....	*3*	*2*	*3*	*6*	*21*	*26*
23	*1*	*2*	....	....	...	....	*2*	....	....	....	....	*2*	....	*14*	*27*
16	....	*4*	....	*1*	*3*	7	*1*	....	....	*1*	8	*10*	*2*	*51*	*28*
2	....	*3*	....	....	...	*3*	*2*	*1*	....	....	....	....	....	*12*	*29*
30	2	7	....	2	1	6	1	....	....	1	1	4	5	33	54
9	....	....	....	....	...	5	2	....	....	2	....	2	....	9	55

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of still-births)	Still-births	All deaths (exclusive of still-births)	DEATHS AT AGE OF —			CASES AND					
					Under 1 year	1-4 years	60 years and over	Typhoid fever, 1		Measles, 7		Scarlet fever, 8	
								Cases	Deaths	Cases	Deaths	Cases	Deaths
	WESTCHESTER Co.—(*Cond'd*)												
56	Mamaroneck	34	....	9	3	....	4	....	....	1	....	2	....
29	*Larchmont, village*	22	....	25	....	2	14	2	....	3	....	3	....
30	*Mamaroneck, village* (*64*)	128	8	59	9	5	23	....	....	1	....	13	....
57	Mt. Pleasant	80	2	348	24	10	145	4	....	7	....	45	....
31	*Briarcliff Manor, village* (61)	6	....	11	2	....	4	....	....	....	....	15	1
32	*North Tarrytown, village*	111	1	37	4	6	15	....	....	113	1	23	....
33	*Pleasantville, village*	24	....	29	....	....	17	....	....	4	....	12	....
34	*Hillside, village**	....	....	....	....	....	....	....	....	....	....	....	....
58	Newcastle (20)	17	....	21	1	....	14	....	....	3	....	11	....
59	North Castle	25	3	23	6	....	9	....	....	15	1	3	....
60	North Salem	21	....	22	6	....	10	....	....	2	....	....	....
61	Ossining (31)	8	....	3	....	....	3	....	....	....	....	5	....
62	*Pelham*†	....	....	....	....	....	....	....	....	....	....	....	....
35	*North Pelham, village*	27	2	18	2	....	6	2	....	8	....	14	....
36	*Pelham, village*	4	....	4	....	....	4	1	....	2	....	4	....
37	*Pelham Manor, village*	13	....	12	....	....	8	1	....	....	....	7	....
63	Poundridge	7	....	7	....	....	5	....	....	1	....	....	....
64	Rye (30)	11	....	9	1	....	4	....	....	17	....	7	....
38	*Rye, village*	51	....	44	3	1	25	....	....	32	....	8	....
65	Scarsdale	24	....	9	....	....	5	1	....	2	....	6	....
40	*Scarsdale, village*	....	....	....	....	....	....	....	....	9	....	8	....
66	Somers	15	1	16	3	....	8	....	....	1	....	....	....
67	White Plains (02)‡	....	....	....	....	....	....	....	....	....	....	....	....
68	Yorktown	35	....	26	7	....	10	4	....	6	....	2	....
10	Sing Sing Prison	....	....	17	....	....	....	....	....	....	....	....	....
11	State Reformatory for Women, Bedford	12	2	6	3	....	....	....	....	....	....	....	....
60	WYOMING COUNTY	663	16	421	48	11	257	8	1	81	1	24	....
50	Arcade	13	1	12	4	....	6	....	....	2	....	....	....
20	*Arcade, village*	26	....	20	3	....	13	....	....	60	....	....	....
51	Attica	18	....	4	1	....	3	....	....	....	....	....	....
21	*Attica, village*	44	2	27	1	....	21	....	....	1	....	3	....
52	Bennington	35	4	19	1	....	13	....	....	5	....	....	....
53	Castile	23	....	16	4	3	5	1	....	....	....	1	....
22	*Castile, village*	11	....	17	....	....	13	....	....	1	....	....	....
23	*Perry, village* (*61*)	115	2	66	10	3	36	....	1	1	....	1	....
54	Covington	15	1	12	1	....	8	....	....	....	....	....	....
55	Eagle	27	....	20	3	2	12	....	....	1	1	....	....
56	Gainesville	28	....	11	5	....	4	....	....	3	....	....	....
24	*Gainesville, village*	5	....	10	....	2	5	....	....	....	....	....	....
25	*Silver Springs, village*	21	....	8	....	....	5	1	....	....	....	....	....
57	Genesee Falls	8	....	8	1	....	6	....	....	....	....	1	....
58	Java	25	1	9	....	....	8	....	....	....	....	....	....
59	Middlebury	18	....	10	3	....	4	....	....	1	....	1	....
28	*Wyoming, village*	7	....	3	....	....	2	....	....	2	....	....	....
60	Orangeville	17	....	14	....	....	12	....	....	1	....	4	....
61	Perry (23)	31	....	12	4	....	4	....	....	1	....	1	....
62	Pike	16	1	8	....	....	5	....	....	....	....	....	....
26	*Pike, village*	3	1	9	1	....	8	....	....	....	....	....	....
63	Sheldon	38	....	16	1	....	9	....	....	....	....	6	....
64	Warsaw	16	....	6	....	....	4	1	....	1	....	....	....
27	*Warsaw, village*	85	2	66	3	1	41	5	....	....	....	5	....
65	Wethersfield	18	1	18	2	....	10	....	....	1	....	1	....
61	YATES COUNTY	290	16	254	24	6	174	5	....	14	....	32	..
50	Barrington	20	....	7	1	....	5	....	....	....	....	....	....
51	Benton	25	2	13	....	....	8	1	....	....	....	7	....
20	*Penn Yan, village* (*55*)	77	7	85	7	4	58	1	....	13	....	8	....
52	Italy	8	....	12	4	....	6	....	....	....	....	....	....

* Disorganised; population included in town of Mount Pleasant.

† Disorganised; included in village of

and deaths by broad age groups, in each registration district; also cases and deaths from causes: **1921** — (Continued)

DEATHS FROM — Whooping cough, 9		Diphtheria, 10		Influenza, 11		TUBERCULOSIS Pulmonary and acute miliary, 31, 37c		TUBERCULOSIS Other forms, 32–37a, b		PNEUMONIA Broncho, 100	PNEUMONIA Lobar and unqualified, 101	Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	District number
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	
2	...	...	...	...	...	3	1	1	...	...	...	1	...	7	56
3	...	1	...	...	...	...	...	...	1	...	1	2	...	19	29
15	2	4	...	...	...	14	5	...	...	4	5	5	...	38	30
3	...	16	...	...	...	5	71	2	3	7	14	87	11	155	57
...	...	...	...	...	...	...	...	...	...	1	...	1	...	8	31
39	...	6	...	...	...	8	2	1	1	3	3	4	...	23	32
7	...	6	...	...	...	2	...	...	...	...	2	4	...	23	33
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*34
3	...	1	...	...	...	2	2	1	1	...	...	2	...	16	58
1	...	9	...	...	...	2	...	...	...	1	1	3	2	15	59
...	...	...	...	...	...	3	1	...	...	...	1	2	2	16	60
3	...	1	...	...	...	...	...	...	...	...	1	...	...	2	61
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	†62
6	...	1	...	...	...	2	2	...	...	1	...	4	...	11	35
2	...	2	...	...	...	...	...	1	...	...	...	...	...	4	36
5	...	6	...	...	...	1	...	...	...	2	3	1	...	6	37
...	...	...	...	...	...	...	...	...	...	1	...	...	...	6	63
2	...	1	...	...	...	1	1	...	...	1	...	2	...	5	64
34	...	1	...	1	1	9	2	1	...	1	2	4	2	32	38
1	...	1	...	...	...	...	...	...	...	...	...	2	...	7	65
6	...	3	...	...	...	2	...	1	...	...	...	...	...	...	40
...	...	1	...	...	...	...	1	...	...	1	1	1	...	12	66
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	67
2	...	7	...	7	...	3	1	...	...	1	2	5	...	17	68
...	...	2	...	...	...	...	...	...	...	...	2	...	...	15	10
...	...	...	...	...	...	...	1	...	...	...	...	...	...	5	11
82	2	16	...	1	...	27	17	4	3	8	9	48	12	319	60
...	1	...	...	...	...	...	...	...	...	...	...	2	...	9	50
1	...	...	...	1	...	5	1	...	...	...	...	1	...	17	20
4	...	...	...	...	...	1	...	...	...	...	...	...	...	4	51
4	...	...	...	...	...	1	1	...	...	...	...	5	...	21	21
...	...	1	...	...	...	1	1	...	...	...	...	2	...	16	52
16	1	...	...	...	...	2	1	...	...	...	...	...	2	12	53
1	...	...	...	...	...	3	...	...	...	...	...	3	...	14	22
5	...	6	...	...	...	3	3	2	1	1	1	5	2	52	23
2	...	...	...	...	...	...	2	...	...	1	...	2	...	7	54
...	...	...	...	...	...	...	...	1	1	1	1	2	...	14	55
2	...	...	...	...	...	...	1	...	...	...	...	...	3	7	56
...	...	...	...	...	...	...	...	...	...	2	...	1	1	6	24
...	...	2	...	...	...	2	1	...	1	...	...	1	...	5	25
...	...	3	...	...	...	1	2	...	...	...	...	...	...	6	57
...	...	1	...	...	...	1	...	...	...	...	...	2	...	7	58
...	...	...	...	...	...	...	...	...	...	...	...	2	...	8	59
...	...	...	...	...	...	...	1	...	...	...	...	1	...	2	28
1	...	...	...	...	...	...	...	...	...	...	...	...	...	13	60
9	...	2	...	...	...	...	...	...	...	...	...	1	2	9	61
2	...	...	...	...	...	...	...	...	...	1	1	...	...	6	62
3	...	1	...	...	...	...	...	...	...	...	...	3	...	6	26
6	...	...	...	...	...	1	1	1	...	...	1	...	...	14	63
3	...	...	...	...	...	1	...	...	...	...	...	2	...	4	64
23	...	...	...	...	...	5	2	...	...	...	4	10	2	48	27
...	...	...	...	...	...	...	1	...	...	1	1	3	...	12	65
39	1	12	1	2	...	17	8	1	2	7	5	16	7	205	61
12	1	...	...	...	...	...	...	...	...	...	...	1	...	5	50
1	...	...	...	...	...	1	2	...	...	...	...	1	...	10	51
2	...	7	...	...	...	5	3	1	...	...	1	9	5	66	20
...	...	...	...	...	...	2	1	...	...	...	1	1	...	9	52

Pelham Manor.

‡ Disorganised; included in city of White Plains.

Table 39 — STATE OF NEW YORK (exclusive of New York City): *Births, stillbirths, certain important*

District number	AREA	All births (exclusive of stillbirths)	Stillbirths	All deaths (exclusive of stillbirths)	Deaths at age of — Under 1 year	Deaths at age of — 1-4 years	Deaths at age of — 60 years and over	Cases and — Typhoid fever, 1 — Cases	Typhoid fever, 1 — Deaths	Measles 7 — Cases	Measles 7 — Deaths	Scarlet fever, 8 — Cases	Scarlet fever, 8 — Deaths
	YATES COUNTY—(*Concluded*)												
53	Jerusalem	28	1	32	2	....	23	1	....	....	....	10	....
54	Middlesex	17	1	14	1	....	10	....	....	....	....	....	....
55	Milo (20)	31	1	18	6	....	12	1	....	....	....	2	....
56	Potter	24	....	7	....	....	7	....	....	....	....	1	..
*21**	*Rushville, village (3456)** (pt.)	*7*	....	*4*	....	....	*4*	....	....	....	....	....	....
57	Starkey	19	1	19	....	1	11	1	....	....	....	....	....
22	*Dundee, village*	*16*	*3*	*26*	*3*	*1*	*20*	....	....	*1*	....	*1*	....
58	Torrey	12	....	9	....	....	6	....	....	....	....	3	....
23	*Dresden, village*	*6*	....	*8*	....	....	*4*	....	....	....	....	....	....

* See Rushville, Ontario county, for complete total.

and deaths by broad age groups, in each registration district; also cases and deaths from causes: 1921 — (Concluded)

DEATHS FROM															
						TUBERCULOSIS				PNEUMONIA					
Whooping cough, 9		Diphtheria, 10		Influenza, 11		Pulmonary and acute miliary, 31, 37c		Other forms, 32–37a, b		Broncho, 100	Lobar and unqualified, 101	Cancer, 43–49	Diarrhea and enteritis (under 2 years), 113	All other causes	
Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Deaths	Deaths	Deaths	Deaths	District number
3	.....	.....	.....	.....	...	1	.....	.....	.....	....	....	....	1	31	53
....	.....	4	.....	.....	...	2	.....	.....	.....	....	....	2	....	12	54
5	.....	.....	.....	.....	...	1	.....	.....	.....	1	1	....	1	15	55
....	.....	.....	.....	.....	...	.....	.....	.....	.....	....	1	1	....	5	56
....	.....	.....	.....	.....	...	.....	.....	.....	.....	....	....	....	....	*4*	**21*
7	.....	1	1	.....	...	3	2	.....	.....	....	....	1	....	15	57
9	.....	.....	.....	*2*	...	*2*	.....	.....	.....	*3*	....	....	....	*21*	*22*
....	.....	.....	.....	.....	...	.....	.....	1	1	....	1	....	....	7	58
....	.....	.....	.....	.....	...	.....	.....	.....	.....	*3*	....	....	....	*5*	*23*

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5–9 years	10–14 years	15–19 years
	Total deaths	T	65,853	8,522	1,285	647	491	404	11,349	1,354	931	1,186
		M	33,686	4,793	669	351	266	219	6,298	756	509	635
		F	32,167	3,729	616	296	225	185	5,051	598	422	551
	I. Total — Epidemic, endemic and infectious diseases	T	8,308	695	402	229	187	185	1,698	550	277	418
		M	4,428	380	193	126	101	100	900	275	126	177
		F	3,880	315	209	103	86	85	798	275	151	241
1	Typhoid and paratyphoid fever	M	146	....	....	....	....	....	....	6	9	15
		F	108	....	....	....	3	....	3	9	11	11
a	Typhoid fever	M	145	....	....	....	....	....	....	6	9	15
		F	106	....	....	....	3	....	3	9	11	11
b	Paratyphoid fever	M	1	....	....	....	....	....	....	....	....	....
		F	2	....	....	....	....	....	....	....	....	....
2	Typhus fever	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
3	Relapsing fever (spirillum obermeiri)	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
4	Malta fever	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
5	Malaria	M	4	....	....	....	....	....	....	....	....	....
		F	4	....	....	....	....	....	....	2	....	....
6	Smallpox	M	1	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
7	Measles	M	116	32	32	18	3	5	90	11	2	2
		F	131	32	41	15	6	4	98	8	6	4
8	Scarlet fever	M	152	10	18	16	17	19	80	44	11	4
		F	123	2	8	13	9	16	48	36	14	5
9	Whooping cough	M	170	100	42	12	5	5	164	4	2	....
		F	236	122	69	19	8	4	222	10	....	1
10	Diphtheria	M	413	23	50	55	51	50	229	124	37	4
		F	395	16	33	38	37	48	172	150	36	13
11	Influenza	M	187	34	7	4	4	1	50	8	6	3
		F	207	26	6	2	....	....	34	4	3	11
a	With pulmonary complications specified	M	75	17	4	3	....	1	25	2	....	1
		F	89	14	2	1	....	....	17	2	1	5
b	Without pulmonary complications specified	M	112	17	3	1	4	....	25	6	6	2
		F	118	12	4	1	....	....	17	2	2	6
12	Miliary fever	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
13	Mumps	M	5	2	....	....	....	....	2	....	1	....
		F	7	....	....	....	....	1	1	1	....	....
14	Asiatic cholera	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
15	Cholera nostras	M	12	2	1	....	1	....	4	....	....	....
		F	4	....	....	....	....	....	....	....	....	....
16	Dysentery	M	31	7	2	1	....	....	10	1	....	1
		F	24	7	2	....	....	....	9	....	....	....
a	Amebic	M	1	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
b	Bacillary	M	1	....	....	....	....	....	....	1	....	....
		F	2	....	....	....	....	....	....	....	....	....
c	Unspecified or due to other causes	M	29	7	2	1	....	....	10	....	....	1
		F	22	7	2	....	....	....	9	....	....	....
17	Plague	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
18	Yellow fever	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
19	Spirochetal hemorrhagic jaundice	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
20	Leprosy	M	1	1	....	....	....	....	1	....	....	....
		F	....	....	....	....	....	....	....	....	....	....

stillbirths) by each cause and class of causes according to sex and age of decedent: **1921**

Age of—																		Int'l List No. (Rev. of 1920)
20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years	55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years	85-89 years	90-94 years	95-99 years	100 years and over	Age unknown	
1,606	1,811	1,973	2,204	2,453	2,901	3,518	4,023	5,077	5,617	5,986	5,853	4,414	2,487	854	193	27	36	
770	875	991	1,160	1,315	1,530	1,846	2,139	2,649	2,891	3,015	2,800	2,023	1,053	330	70	10	21	
836	936	982	1,044	1,138	1,371	1,672	1,864	2,428	2,726	2,971	3,053	2,391	1,434	524	123	17	15	
699	758	634	602	524	472	389	343	272	235	167	134	73	44	11	5	.....	3	
205	344	332	353	315	295	250	236	169	150	81	63	39	19	5	2	.....	2	
404	414	302	249	209	177	139	107	103	85	86	71	34	25	6	3	.....	1	
17	18	15	19	10	11	7	5	4	6	3	1	.....	.....	.....	.....	.....	.....	1
14	16	5	9	4	9	5	3	2	3	3	1	.....	.....	.....	.....	.....	.....	
17	18	15	19	10	11	7	5	4	6	3	.....	.....	.....	.....	.....	.....	.....	a
14	16	5	9	4	9	5	2	2	2	3	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	b
.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	1	2	1	.....	1	.....	1	1	3	.....	1	.....	.....	.....	.....	.....	.....	7
.....	.....	3	.....	3	1	4	.....	1	.....	1	1	1	.....	.....	.....	.....	.....	
5	4	2	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
7	8	2	3	3	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
.....	.....	.....	.....	.....	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
5	2	2	2	2	1	3	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
6	4	3	3	4	2	1	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	
5	2	3	2	5	4	6	15	6	19	15	13	14	5	5	1	.....	.....	11
7	5	7	6	11	7	12	5	9	19	15	23	11	13	4	1	.....	.....	
1	1	.....	.....	3	3	1	7	3	10	9	2	5	1	.....	1	.....	.....	a
2	4	2	2	4	5	5	2	5	10	4	7	6	5	1	.....	.....	.....	
4	1	3	2	2	1	5	8	3	9	6	11	9	4	5	.....	.....	.....	b
5	1	5	4	7	2	7	3	4	9	11	16	5	8	3	1	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
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.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	1	1	.....	.....	.....	.....	
1	.....	.....	.....	.....	1	.....	1	1	3	3	2	4	3	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	1	.....	1	1	1	1	4	4	1	1	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5–9 years	10–14 years	15–19 years
	1. General diseases — (*Continued*)											
21	Erysipelas	M	95	30	....	....	2	....	32	....	1	1
		F	64	11	2	....	....	1	14	....	....	....
22	Acute poliomyelitis	M	71	5	3	4	1	5	18	19	12	7
		F	52	3	4	3	4	4	18	9	11	4
23	Lethargica encephalitis	M	44	2	1	....	1	....	4	5	4	3
		F	42	1	4	1	1	1	8	4	2	2
24	Meningococcus meningitis	M	16	2	2	....	....	3	7	3	1	....
		F	13	5	2	1	....	1	9	1	1	....
25	Other epidemic or endemic diseases	M	7	6	1	....	....	....	7	....	....	....
		F	2	1	....	....	....	....	1	....	....	....
a	Chickenpox	M	6	5	1	....	....	....	6	....	....	....
		F	2	1	....	....	....	....	1	....	....	....
b	German measles	M	1	1	....	....	....	....	1	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
c	Others under this title	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
26	Glanders	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
27	Anthrax	M	2	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
28	Rabies	M	1	....	....	....	....	....	....	....	....	1
		F	....	....	....	....	....	....	....	....	....	....
29	Tetanus	M	42	5	....	....	....	....	5	4	5	2
		F	13	....	1	....	....	....	1	1	2	....
30	Mycoses	M	1	....	....	....	....	....	....	....	....	....
		F	2	....	....	....	....	....	....	....	....	....
31	Tuberculosis of the respiratory system	M	2,211	10	5	2	1	1	19	13	14	107
		F	1,942	11	6	1	3	....	21	9	43	162
32	Tuberculosis of the meninges and central nervous system	M	132	28	20	7	8	7	70	21	9	5
		F	115	18	18	6	10	3	55	17	13	6
33	Tuberculosis of the intestines and peritoneum	M	78	3	3	2	1	1	10	3	2	4
		F	86	3	1	2	1	....	7	4	6	5
34	Tuberculosis of the vertebral column	M	28	1	1	....	2	1	5	1	....	1
		F	23	1	1	....	....	....	2	....	....	2
35	Tuberculosis of the joints	M	14	....	....	....	....	....	....	....	3	1
		F	13	....	....	....	....	....	....	1	....	2
36	Tuberculosis of the other organs	M	46	2	1	1	1	....	5	2	1	2
		F	43	1	2	1	2	....	6	1	1	4
a	Tuberculosis of the skin and subcutaneous cellular tissue	M	4	1	....	1	....	....	2	....	....	....
		F	4	1	....	....	....	....	1	....	1	....
b	Tuberculosis of the bones (vertebral column excepted)	M	12	....	1	....	....	....	1	2	....	1
		F	5	....	....	....	....	....	....	....	....	....
c	Tuberculosis of the lymphatic system (mesenteric and retroperitoneal glands excepted)	M	4	....	....	....	1	....	1	....	....	....
		F	8	....	1	....	1	....	2	1	....	1
d	Tuberculosis of the genitourinarysystem	M	22	....	....	....	....	....	....	....	1	1
		F	17	....	....	....	1	....	1	....	....	2
e	Tuberculosis of organs, other than the above	M	4	1	....	....	....	....	1	....	....	....
		F	9	....	1	1	....	....	2	....	....	1
37	Disseminated tuberculosis	M	46	2	....	3	1	2	8	4	3	5
		F	46	1	4	1	....	....	6	4	1	7
a	Acute	M	1	....	....	....	....	....	....	....	....	....
		F	1	....	....	....	....	....	....	1	....	....
b	Chronic or unstated	M	6	....	....	....	....	....	....	1	....	....
		F	3	....	....	....	....	....	....	....	....	1
c	Acute miliary	M	39	2	....	3	1	2	8	3	3	5
		F	42	1	4	1	....	....	6	3	1	6
38	Syphilis	M	264	64	4	1	1	....	70	1	2	4
		F	132	45	4	....	1	....	50	1	....	1
39	Soft chancre	M	....	....	....	....	....	....	....	....	....	....
		F	1	....	....	....	....	....	....	....	....	....

stillbirths) by each cause and class of causes according to sex and age of decedent **: 1921 — (Cont'd)**

Age of —																		Int'l List No (Rev. of 1920)
20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years	50–54 years	55–59 years	60–64 years	65–69 years	70–74 years	75–79 years	80–84 years	85–89 years	90–94 years	95–99 years	100 years and over	Age unknown	
.....	3	1	3	4	5	2	8	2	9	6	11	3	4	.....	.....	.....	.....	21
1	1	1	1	1	3	3	5	6	3	7	12	2	2	1	1	.....	.....	
5	1	4	3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22
6	2	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	2	2	3	4	3	3	4	1	2	1	.....	.....	.....	.....	.....	.....	.....	23
2	2	4	3	4	3	2	2	2	.....	1	.....	1	.....	.....	.....	.....	.....	
1	.....	.....	.....	1	1	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	24
1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	c
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	27
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	2	1	.....	3	3	3	2	5	1	4	1	.....	.....	.....	.....	.....	.....	29
1	.....	2	1	.....	.....	2	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	
230	281	263	275	234	217	172	154	111	77	39	25	9	.....	.....	.....	.....	1	31
316	335	244	193	143	123	87	77	61	42	49	22	11	3	.....	.....	.....	1	
3	5	4	6	1	3	2	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32
5	3	5	1	5	2	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	5	5	6	6	7	10	8	3	2	2	1	.....	1	.....	.....	.....	.....	33
12	14	6	8	4	6	5	2	3	3	1	.....	.....	.....	.....	.....	.....	.....	
1	2	5	.....	2	3	2	3	1	1	.....	1	.....	.....	.....	.....	.....	.....	34
1	2	2	1	2	1	.....	2	3	1	1	2	1	.....	.....	.....	.....	.....	
1	.....	.....	.....	.....	.....	1	2	5	1	.....	.....	.....	.....	.....	.....	.....	.....	35
2	3	.....	.....	1	.....	.....	1	2	.....	.....	.....	1	.....	.....	.....	.....	.....	
3	2	6	2	2	7	4	3	2	1	.....	2	1	1	.....	.....	.....	.....	36
3	3	.....	4	4	3	2	3	3	3	1	1	1	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	.....	.....	.....	.....	1	2	3	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	b
1	1	.....	.....	1	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	c
.....	.....	.....	.....	.....	.....	1	1	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	
2	2	5	2	2	5	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	d
1	1	.....	3	3	2	.....	1	2	.....	.....	.....	1	.....	.....	.....	.....	.....	
.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	e
1	1	.....	1	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	
3	5	3	4	2	2	1	2	2	2	.....	.....	.....	.....	.....	.....	.....	.....	37
8	7	2	1	2	.....	3	.....	1	2	1	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	1	.....	1	2	1	.....	.....	.....	.....	.....	.....	.....	.....	b
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	
3	5	3	4	2	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	c
8	7	2	1	1	.....	3	.....	1	2	1	.....	.....	.....	.....	.....	.....	.....	
3	6	13	20	33	23	25	19	20	18	2	.....	2	.....	.....	.....	.....	1	38
7	6	13	9	15	11	6	3	4	2	3	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5–9 years	10–14 years	15–19 years
	Epidemic, endemic and infectious diseases — (*Concluded*)											
40	Gonococcus infection	M	3	....	....	....	....	....	....	....	....	....
		F	6	3	....	....	....	....	3	1	....	....
41	Purulent infection, septicemia	M	59	9	....	....	1	....	10	1	1	3
		F	37	6	1	....	1	2	10	2	1	1
42	Other infectious diseases	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
	II. General diseases not included above	T	8,003	120	21	15	24	16	196	68	93	73
		M	3,294	67	12	8	8	8	103	37	49	34
		F	4,709	53	9	7	16	8	93	31	44	39
43	Cancer and other malignant tumors of the buccal cavity	M	168	....	....	....	....	....	....	....	....	....
		F	36	....	....	1	....	....	1	....	....	....
44	Cancer and other malignant tumors of the stomach and liver	M	926	....	....	....	1	....	1	1	....	....
		F	937	1	1	....	....	....	2	1	....	1
45	Cancer and other malignant tumors of the peritoneum, intestines and rectum	M	382	....	....	....	....	....	....	....	....	1
		F	484	....	....	....	1	....	1	....	....	....
46	Cancer and other malignant tumors of the female genital organs	M	867	....	....	....	....	....	....	....	2	1
		F										
47	Cancer and other malignant tumors of the breast	M	11	....	....	....	....	....	....	....	....	....
		F	527	....	....	....	....	....	....	....	....	....
48	Cancer and other malignant tumors of the skin	M	112	....	....	....	....	....	....	....	....	....
		F	64	....	....	....	....	....	....	....	....	....
49	Cancer and other malignant tumors of other or unspecified organs	M	637	....	1	1	....	....	2	....	....	2
		F	409	....	....	....	1	2	3	4	2	2
50	Benign tumors and tumors not returned as malignant (tumors of the female genital organs excepted)	M	5	....	....	1	....	....	1	1	....	....
		F	13	....	....	....	....	....	....	....	1	....
		M	124	....	....	....	1	1	2	16	23	12
51	Acute rheumatic fever	F	123	....	1	....	5	1	7	14	18	9
52	Chronic rheumatism, osteoarthritis gout	M	35	....	....	....	....	....	....	....	....	....
		F	47	....	....	....	....	....	....	....	....	....
53	Scurvy	M	1	....	1	....	....	....	1	....	....	....
		F	2	....	....	....	....	....	....	1	....	....
54	Pellagra	M	4	....	....	....	....	....	....	....	....	....
		F	10	....	....	....	....	....	....	....	....	....
55	Beriberi	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
56	Rickets	M	11	4	3	1	1	....	9	2	....	....
		F	13	7	4	1	....	....	12	1	....	....
57	Diabetes mellitus	M	446	....	4	3	1	4	12	11	16	15
		F	654	....	1	2	2	1	6	7	15	10
58	Anemia, chlorosis	M	161	....	....	....	1	....	1	2	1	....
		F	247	2	1	....	....	1	4	1	2	4
a	Pernicious anemia	M	146	....	....	....	1	....	1	2	....	....
		F	229	2	....	....	....	1	3	1	2	3
b	Other anemias and chlorosis	M	15	....	....	....	....	....	....	....	1	....
		F	18	....	1	....	....	....	1	....	....	1
59	Diseases of the pituitary gland	M	2	1	....	....	....	....	1	....	....	....
		F	1	....	....	....	....	....	....	....	....	....
60	Diseases of the thyroid gland	M	24	1	....	....	....	....	1	....	....	2
		F	113	....	....	....	....	....	....	....	1	9
a	Exophthalmic goiter	M	18	....	....	....	....	....	....	....	....	....
		F	79	....	....	....	....	....	....	....	....	6
b	Other diseases of the thyroid gland	M	6	1	....	....	....	....	1	....	....	2
		F	34	....	....	....	....	....	....	....	1	3
61	Diseases of the parathyroid glands	M	2	1	....	....	....	....	1	....	....	....
		F	1	....	....	....	....	....	7	....	....	....
62	Diseases of the thymus gland	M	8	7	....	....	....	....	....	....	....	....
		F	7	4	....	1	....	....	5	1	1	....

stillbirths) by each cause and class of causes according to sex and age of decedent: **1921 — (Cont'd)**

AGE OF —																		Int'l List No. (Rev of 1920).
20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years	50–54 years	55–59 years	60–64 years	65–69 years	70–74 years	75–79 years	80–84 years	85–89 years	90–94 years	95–99 years	100 years and over	Age unknown	
1	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	2	.....	5	2	3	6	3	3	5	4	3	2	2	.....	1	.....	.....	41
4	.....	1	4	2	2	3	.....	2	2	.....	2	.....	1	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
73	108	157	255	388	586	741	920	1,109	1,068	927	690	360	135	39	7	3	7	
29	51	49	95	140	187	271	367	463	465	430	303	146	54	14	3	1	3	
44	57	108	160	248	399	470	553	646	603	497	387	214	81	25	4	2	4	
.....	.....	.....	2	6	9	11	24	16	28	32	19	17	3	.....	.....	1	.....	43
.....	.....	.....	1	.....	4	2	2	4	7	3	3	4	4	1	.....	.....	.....	
1	4	7	11	30	59	94	124	164	151	123	99	39	14	3	.....	.....	1	44
.....	4	10	16	42	61	88	105	133	165	140	118	55	20	4	1	.....	1	
2	5	2	20	10	20	33	47	58	70	45	47	15	5	1	.....	.....	1	45
1	8	3	16	17	37	47	47	86	57	67	51	34	11	1	.....	.....	.....	
2	14	27	42	77	106	113	115	112	. 101	70	49	24	10	1	.....	1	.....	46
.....	.....	.....	1	.....	3	.....	.....	2	.....	4	1	.....	.....	.....	.....	.....	.....	47
1	3	9	20	28	64	65	63	82	68	44	40	25	10	5	.....	.....	.....	
.....	1	1	1	4	3	5	11	4	14	21	14	19	8	4	2	.....	.....	48
1	.....	.....	.....	2	4	3	6	7	4	4	7	11	8	3	2	1	1	
2	8	7	13	33	32	53	63	103	92	111	61	33	13	5	1	.....	.....	49
2	5	11	15	24	41	50	58	60	39	41	25	18	4	2	1	.....	1	
.....	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	50
.....	.....	.....	1	.....	1	.....	4	.....	2	3	.....	1	.....	.....	.....	.....	.....	
5	4	2	5	10	2	6	4	3	7	10	5	6	2	.....	.....	.....	.....	51
5	1	11	7	4	7	7	7	1	4	6	6	5	3	1	.....	.....	.....	
1	1	.....	2	.....	1	3	3	5	6	4	5	.....	4	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	.....	2	2	5	3	6	14	6	8	1	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	3	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	54
1	.....	.....	3	1	1	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
13	19	16	14	14	25	28	43	57	59	52	39	9	4	.....	.....	.....	.....	57
20	10	13	15	23	33	43	92	108	102	75	50	27	3	1	.....	.....	1	
1	1	4	7	12	9	15	21	30	23	17	11	6	.....	.....	.....	.....	.....	58
4	4	4	10	11	21	25	34	33	41	26	14	1	.....	3	.....	.....	.....	
1	1	4	5	12	8	15	19	27	19	16	11	5	.....	.....	.....	.....	.....	a
3	3	4	10	10	21	24	31	33	39	25	11	1	.....	2	.....	.....	.....	
.....	.....	.....	2	.....	1	.....	2	3	4	1	.....	1	.....	.....	.....	.....	.....	b
1	1	.....	.....	1	.....	1	3	2	2	1	3	.....	.....	1	.....	.....	.....	
.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	1	.....	1	3	1	3	3	4	3	1	.....	.....	.....	.....	.....	.....	.....	60
4	6	8	7	10	14	10	13	8	8	6	6	3	.....	.....	.....	.....	.....	
1	1	.....	1	3	1	3	2	3	3	.....	.....	.....	.....	.....	.....	.....	.....	a
3	5	7	6	8	12	7	7	7	5	3	2	1	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	b
1	1	1	1	2	2	3	6	1	3	3	4	2	.....	.....	.....	.....	.....	
.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61
.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths (excusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5–9 years	10–14 years	15–19 years
	II. General diseases — (*Concluded*)											
63	Diseases of the adrenals (Addison's disease)	M	17	....	....	....	....	....	....	....	....	1
		F	17	....	....	....	....	....	....	....	....	1
64	Diseases of the spleen	M	5	....	....	....	....	....	....	....	....	....
		F	4	....	....	....	1	....	1	....	....	....
65	Leukemia and Hodgkin's disease	M	72	4	....	1	3	1	9	2	6	1
		F	37	....	....	1	4	3	8	1	1	2
a	Leukemia	M	42	3	....	1	3	1	8	1	5	....
		F	35	....	....	1	4	3	8	1	1	2
b	Hodgkin's disease	M	30	1	....	....	....	....	1	1	1	1
		F	2	....	....	....	....	....	....	....	....	....
66	Alcoholism (acute or chronic)	M	56	....	....	....	....	....	....	....	....	....
		F	5	....	....	....	....	....	....	....	....	....
67	Chronic poisoning by mineral substances	M	6	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
a	Chronic lead poisoning	M	6	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
b	Others under this title	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
68	Chronic poisoning by organic substances	M	4	....	....	....	....	....	....	....	....	....
		F	5	....	....	....	....	....	....	....	....	....
69	Other general diseases	M	75	49	3	1	....	2	55	2	3	....
		F	56	39	1	1	2	....	43	....	1	....
	III. Diseases of the nervous system and organs of special sense	T	8,491	211	61	28	15	15	330	71	64	55
		M	4,137	137	30	14	6	11	198	37	37	33
		F	4,354	74	31	14	9	4	132	34	27	22
70	Encephalitis	M	31	1	2	....	....	2	5	....	....	1
		F	40	....	2	....	....	....	2	3	1	2
71	Meningitis	M	128	32	15	7	2	4	60	17	15	6
		F	80	16	9	6	3	2	36	6	5	4
a	Simple meningitis	M	79	27	10	4	2	....	43	9	4	2
		F	56	13	6	3	1	1	24	4	2	2
b	Non-epidemic cerebrospinal meningitis	M	49	5	5	3	....	4	17	8	11	4
		F	24	3	3	3	2	1	12	2	3	2
72	Tabes dorsalis (locomotor ataxia)	M	92	....	1	....	....	....	1	....	....	....
		F	34	....	....	....	....	....	....	....	....	....
73	Other diseases of the spinal cord	M	159	1	1	....	....	....	2	....	5	1
		F	156	....	1	....	1	....	2	3	....	....
74	Cerebral hemorrhage, apoplexy	M	2,841	21	2	1	1	1	26	....	1	4
		F	3,421	12	3	1	1	....	17	1	1	4
a	Cerebral hemorrhage	M	2,741	21	1	1	1	1	25	....	1	3
		F	3,291	12	3	1	1	....	17	1	1	3
b	Cerebral thrombosis and embolism	M	100	....	1	....	....	....	1	....	....	1
		F	130	....	....	....	....	....	....	....	....	1
75	Paralysis without specified cause	M	161	2	....	....	....	....	2	1	....	1
		F	166	1	....	....	....	....	1	....	....	....
a	Hemiplegia	M	70	1	....	....	....	....	1	....	....	....
		F	82	....	....	....	....	....	....	....	....	....
b	Others under this title	M	91	1	....	....	....	....	1	1	....	1
		F	84	1	....	....	....	....	1	....	....	....
76	General paralysis of the insane	M	321	....	....	....	....	....	....	....	....	....
		F	78	....	....	....	....	....	....	....	1	....
77	Other forms of mental alienation	M	29	....	....	....	....	....	....	1	....	....
		F	59	....	....	....	....	....	....	....	2	....
78	Epilepsy	M	95	3	....	....	2	1	6	4	2	13
		F	73	1	1	....	1	2	5	3	2	6
79	Convulsions (nonpuerperal) (5 years and over)	M	4	....	....	....	....	....	....	1	....	1
		F	9	....	....	....	....	....	....	2	....	1
80	Infantile convulsions (under 5 years of age)	M	63	56	2	3	1	1	63	....	....	....
		F	44	31	6	5	2	....	44	....	....	....
81	Chorea	M	3	....	....	....	....	....	....	....	....	1
		F	2	....	....	....	....	....	....	....	....	....

stillbirths) by each cause and class of causes according to sex and age of decedent: **1921** — (Cont'd)

Age of —																		Int'l List No. (Rev. of 1920
20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years	55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years	85-89 years	90-94 years	95-99 years	100 years and over	Age unknown	
.....	1	.....	1	2	2	2	2	1	3	1	1	.....	.....	.....	.....	.....	.....	63
2	.....	2	2	3	.....	1	1	.....	2	2	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	1	2	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	64
.....	.....	1	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
1	3	6	5	5	6	4	9	7	3	4	.....	.....	1	.....	.....	.....	.....	65
1	1	3	2	4	3	8	1	.....	.....	1	.....	.....	.....	1	.....	.....	.....	
1	2	2	2	2	3	3	5	5	2	1	.....	.....	.....	.....	.....	.....	.....	a
.....	1	3	2	4	3	8	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	
.....	1	4	3	8	3	1	4	2	1	8	.....	.....	1	.....	.....	.....	.....	b
1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	3	6	9	11	8	8	5	1	4	.....	.....	.....	.....	.....	.....	1	66
.....	.....	3	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	1	.....	1	2	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	67
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	1	.....	1	2	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	1	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	68
.....	1	.....	1	1	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	
1	2	1	.....	1	1	2	.....	2	2	.....	1	1	.....	1	.....	.....	.....	69
.....	.....	3	1	.....	1	1	1	1	.....	2	1	.....	.....	1	.....	.....	.....	
67	68	114	173	249	354	541	674	851	1,012	1,218	1,204	838	453	118	27	5	5	
34	50	68	108	139	185	268	331	427	518	581	554	344	180	36	6	1	2	
33	18	46	65	110	169	273	343	424	494	637	650	494	273	82	21	4	3	
5	2	.....	2	2	3	1	2	3	2	2	1	.....	.....	.....	.....	.....	.....	70
4	2	2	3	2	4	3	2	3	1	3	.....	2	.....	1	.....	.....	.....	
2	4	1	3	3	3	4	4	1	1	3	.....	1	.....	.....	.....	.....	.....	71
4	1	4	4	3	1	.....	3	1	8	4	.....	1	.....	.....	.....	.....	.....	
1	1	.....	3	2	3	3	4	1	.....	2	.....	1	.....	.....	.....	.....	.....	a
3	1	3	4	2	1	.....	2	.....	1	4	.....	1	.....	.....	.....	.....	.....	
1	3	1	.....	1	.....	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	b
1	.....	1	.....	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	1	1	2	7	11	12	13	12	10	9	9	2	2	.....	.....	.....	.....	72
.....	.....	3	.....	3	3	4	7	3	6	2	2	.....	1	.....	.....	.....	.....	
1	1	2	4	3	5	17	12	19	32	26	14	13	2	.....	.....	.....	.....	73
.....	1	3	2	5	8	12	14	23	23	24	18	13	3	2	.....	.....	.....	
3	6	12	23	38	78	164	251	342	412	497	480	297	165	34	5	1	2	74
3	3	15	25	57	112	210	281	350	417	563	583	436	244	74	19	4	2	
3	4	11	23	37	76	157	241	330	401	478	463	287	158	33	5	1	2	a
1	2	12	22	49	111	195	271	342	408	540	565	417	238	71	19	4	2	
.....	.....	1	.....	1	2	7	10	12	11	19	17	10	7	1	.....	.....	.....	b
2	1	3	3	8	1	15	10	8	9	23	18	19	6	3	.....	.....	.....	
1	.....	.....	2	6	5	9	7	16	27	27	29	18	7	2	1	.....	.....	75
.....	.....	3	.....	7	1	10	6	18	24	29	28	21	13	3	1	.....	1	
.....	.....	.....	.....	2	2	5	3	6	10	13	17	8	2	1	.....	.....	.....	a
.....	.....	1	.....	4	.....	6	4	11	10	12	15	10	7	2	.....	.....	.....	
1	.....	.....	2	4	3	4	4	10	17	14	12	10	5	1	1	.....	.....	b
.....	.....	2	.....	3	1	4	2	7	14	17	13	11	6	1	1	.....	1	
2	12	37	56	59	60	37	19	19	11	4	3	2	.....	.....	.....	.....	.....	76
2	1	6	11	16	11	5	5	4	2	3	4	5	1	1	.....	.....	.....	
1	3	1	2	2	2	4	1	2	4	.....	5	1	.....	.....	.....	.....	.....	77
5	1	3	5	5	10	7	4	7	6	1	1	2	.....	.....	.....	.....	.....	
15	9	7	8	7	4	3	4	1	5	3	4	.....	.....	.....	.....	.....	.....	78
8	4	4	5	2	4	10	6	3	3	2	3	.....	3	.....	.....	.....	.....	
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	79
.....	.....	.....	1	.....	1	1	.....	1	.....	.....	2	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	81
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5-9 years	10-14 years	15-19 years
	III. Diseases of the nervous system — (*Concluded*)											
82	Neuralgia and neuritis	M	13	....	1	....	....	....	1	....	....	....
		F	12	....	....	....	....	....	....	....	....	1
83	Softening of the brain	M	34	....	....	....	....	....	....	....	....	....
		F	34	....	....	....	....	....	....	....	....	....
84	Other diseases of the nervous system	M	83	5	4	1	....	....	10	3	5	2
		F	72	2	2	1	....	....	5	3	3	1
85	Diseases of the eye and annexa	M	1	....	....	....	....	....	....	1	....	....
		F	2	....	....	....	1	....	1	....	....	....
86	Diseases of the ear and of the mastoid process	M	79	16	2	2	....	2	22	9	9	3
		F	72	11	7	1	....	....	19	13	12	3
a	Diseases of the ear	M	52	10	2	2	....	2	16	6	5	2
		F	39	6	6	....	....	....	12	9	6	2
b	Diseases of the mastoid process	M	27	6	....	....	....	....	6	3	4	1
		F	33	5	1	1	....	....	7	4	6	1
	IV. Diseases of the circulatory system	T	13,637	129	24	25	19	17	214	88	104	120
		M	6,873	71	9	10	10	11	111	47	49	50
		F	6,764	58	15	15	9	6	103	41	55	70
87	Pericarditis	M	39	....	....	1	....	....	1	2	....	1
		F	23	....	....	....	....	....	....	3	2	....
88	Acute endocarditis and myocarditis	M	289	15	1	2	4	3	25	11	7	10
		F	314	16	3	3	3	4	29	10	15	15
89	Angina pectoris	M	473	1	....	....	....	....	1	....	....	1
		F	236	....	....	....	....	....	....	....	....	....
90	Other diseases of the heart	M	4,942	32	5	6	5	8	56	33	42	37
		F	5,146	32	6	11	5	2	56	27	38	54
91	Diseases of the arteries	M	1,019	1	....	....	....	....	1	1	....	1
		F	937	....	....	....	....	....	....	....	....	....
a	Aneurysm	M	45	....	....	....	....	....	....	....	....	1
		F	21	....	....	....	....	....	....	....	....	....
b	Arteriosclerosis	M	967	1	....	....	....	....	1	1	....	....
		F	905	....	....	....	....	....	....	....	....	....
c	Other diseases of the arteries	M	7	....	....	....	....	....	....	....	....	....
		F	11	....	....	....	....	....	....	....	....	....
92	Embolism and thrombosis (not cerebral)	M	60	3	1	....	....	....	4	....	....	....
		F	66	3	2	....	....	....	5	....	....	....
93	Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)	M	11	....	....	....	....	....	....	....	....	....
		F	17	....	....	....	....	....	....	....	....	....
94	Diseases of the lymphatic system (lymphangitis, etc.)	M	29	19	2	1	1	....	23	....	....	....
		F	19	7	4	1	1	....	13	1	....	1
95	Hemorrhage without specified cause	M	1	....	....	....	....	....	....	....	....	....
		F	1	....	....	....	....	....	....	....	....	....
96	Other diseases of the circulatory system	M	10	....	....	....	....	....	....	....	....	....
		F	5	....	....	....	....	....	....	....	....	....
	V. Diseases of the respiratory system	T	5,272	940	304	127	64	53	1,488	118	57	71
		M	2,766	534	165	73	31	25	828	70	24	43
		F	2,506	406	139	54	33	28	660	48	33	28
97	Diseases of the nasal fossae and their annexa	M	4	1	....	....	....	....	1	....	....	....
		F	2	2	....	....	....	....	2	....	....	....
a	Diseases of the nasal fossae	M	3	1	....	....	....	....	1	....	....	....
		F	1	1	....	....	....	....	1	....	....	....
b	Others under this title	M	1	....	....	....	....	....	....	....	....	....
		F	1	1	....	....	....	....	1	....	....	....
98	Diseases of the larynx	M	29	7	2	1	4	1	15	5	1	....
		F	11	1	....	....	1	4	6	2	....	....
99	Bronchitis	M	295	99	12	6	2	3	122	3	1	....
		F	303	57	14	....	3	2	76	3	....	3
a	Acute	M	139	71	10	4	1	3	89	1	1	....
		F	133	32	9	....	1	1	43	2	....	2

stillbirths) by each cause and class of causes according to sex and age of decedent: **1921 — (Cont'd)**

AGE OF—																		
20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years	50–54 years	55–59 years	60–64 years	65–69 years	70–74 years	75–79 years	80–84 years	85–89 years	90–94 years	95–99 years	100 years and over	Age unknown	Int'l List No. (Rev. of 1920)
.....	.....	1	.....	1	.....	1	3	1	3	1	.....	1	.....	.....	.....	.....	.....	82
1	.....	.....	.....	.....	2	2	.....	1	.....	2	.....	2	1	.....	.....	.....	.....	
.....	.....	.....	1	.....	2	4	2	2	1	7	8	6	1	.....	.....	.....	.....	83
.....	.....	.....	2	.....	1	1	.....	4	3	3	5	8	6	1	.....	.....	.....	
2	6	2	3	7	7	11	11	4	4	1	1	1	3	.....	.....	.....	.....	84
3	4	2	5	5	9	5	12	3	3	1	3	3	1	.....	1	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	85
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	6	4	2	3	5	1	2	5	5	1	.....	.....	.....	.....	.....	.....	.....	86
3	1	1	2	4	2	3	3	2	3	.....	.....	1	.....	.....	.....	.....	.....	
2	5	1	2	3	3	.....	1	2	3	1	.....	.....	.....	.....	.....	.....	.....	a
.....	1	.....	1	1	2	2	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	
.....	1	3	.....	.....	2	1	1	3	2	.....	.....	.....	.....	.....	.....	.....	.....	b
3	.....	1	1	3	.....	1	2	2	2	.....	.....	.....	.....	.....	.....	.....	.....	
76	102	162	224	299	443	663	841	1,313	1,681	2,046	2,121	1,730	984	346	69	5	6	
34	47	86	99	153	241	361	457	731	923	1,033	1,028	825	424	142	25	3	4	
42	55	76	125	146	202	302	384	582	758	1,013	1,093	905	560	204	44	2	2	
.....	.....	.....	3	3	4	2	6	2	2	3	6	4	.....	.....	.....	.....	.....	87
.....	2	1	2	2	1	1	.....	3	.....	1	2	1	2	.....	.....	.....	.....	
10	8	17	16	17	32	42	51	5	6	12	4	11	3	1	1	.....	.....	88
11	22	13	18	24	25	32	42	7	10	7	16	8	8	1	1	.....	.....	
.....	.....	3	14	13	31	39	57	70	80	61	60	29	11	2	.....	.....	1	89
.....	.....	1	6	2	12	13	22	35	33	35	41	24	10	2	.....	.....	.....	
21	35	64	61	103	160	241	291	579	710	772	763	592	289	77	12	1	3	90
30	30	55	93	108	155	227	293	489	621	813	834	686	376	130	29	.....	2	
1	1	1	1	11	11	23	45	62	116	175	194	179	120	62	12	2	.....	91
.....	.....	.....	.....	2	5	21	22	38	89	146	185	181	162	70	14	2	.....	
1	1	1	.....	4	4	10	7	5	7	2	2	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	1	1	1	2	5	1	4	4	.....	2	.....	.....	.....	.....	
.....	.....	.....	1	7	7	11	38	57	108	172	191	179	118	62	12	2	.....	b
.....	.....	.....	.....	1	4	19	20	33	87	142	177	180	158	70	12	2	.....	
.....	.....	.....	.....	.....	.....	2	.....	.....	1	1	1	.....	2	.....	.....	.....	.....	c
.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	4	1	2	.....	2	.....	.....	
1	3	1	1	4	2	9	5	10	7	7	.....	5	1	.....	.....	.....	.....	92
1	1	5	5	5	2	5	2	6	3	8	11	4	2	1	.....	.....	.....	
.....	.....	.....	1	.....	1	3	1	1	1	2	.....	1	.....	.....	.....	.....	.....	93
.....	.....	.....	1	2	1	3	3	1	1	2	2	1	.....	.....	.....	.....	.....	
1	.....	.....	1	.....	.....	.....	1	1	.....	.....	.....	2	.....	.....	.....	.....	.....	94
.....	.....	1	.....	.....	1	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	95
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	1	1	.....	2	.....	1	1	1	1	2	.....	.....	.....	.....	.....	96
.....	.....	.....	.....	1	.....	.....	.....	2	1	1	.....	.....	.....	.....	.....	.....	.....	
87	92	140	160	205	198	229	262	380	377	379	372	355	203	79	17	2	1	
47	53	75	99	121	120	128	149	202	191	183	171	149	80	28	5	.....	.....	
40	39	65	61	84	78	101	113	178	186	196	201	206	123	51	12	2	1	
.....	.....	1	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	97
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	2	.....	.....	.....	2	.....	.....	1	.....	1	.....	1	.....	.....	.....	.....	.....	98
.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	4	2	6	6	8	12	14	20	28	38	20	9	2	.....	.....	99
3	2	1	2	4	.....	5	8	12	17	25	38	49	33	19	3	.....	.....	
.....	.....	.....	1	1	2	3	.....	4	4	6	8	8	5	5	1	.....	.....	
3	2	1	1	1	.....	1	2	3	11	4	13	19	16	8	1	.....	.....	

Table 40 — State of New York (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5-9 years	10-14 years	15-19 years
	V. Diseases of respiratory system—(Concluded)											
b	Chronic	M	75	2	1	....	1	....	4	....	....	....
		F	80	1	1	....	....	....	2	....	....	....
c	Not otherwise defined (under 5 years of age)	M	30	26	1	2	....	....	29	1	....	....
		F	33	24	4	....	2	1	31	1	....	1
d	Not otherwise defined over 5 years of age	M	51	....	....	....	....	....	....	1	....	....
		F	57	....	....	....	....	....	....	....	....	....
100	Bronchopneumonia	M	945	330	105	41	14	10	500	30	3	9
		F	934	274	90	33	17	14	428	20	4	6
a	Bronchopneumonia	M	910	316	99	40	14	9	478	29	3	9
		F	895	259	85	32	16	13	405	19	4	6
b	Capillary bronchitis	M	35	14	6	1	....	1	22	1	....	....
		F	39	15	5	1	1	1	23	1	....	....
101	Pneumonia	M	1,242	84	43	18	8	8	161	26	18	28
		F	1,047	63	30	20	11	6	130	20	25	14
a	Lobar	M	1,102	65	40	14	6	8	133	24	15	26
		F	936	46	28	19	10	6	109	20	22	12
b	Not otherwise defined	M	140	19	3	4	2	....	28	2	3	2
		F	111	17	2	1	1	....	21	....	3	2
102	Pleurisy	M	97	4	2	5	2	2	15	5	....	4
		F	84	....	5	1	1	1	8	1	3	3
103	Congestion and hemorrhagic infarct of the lung	M	54	6	....	1	1	1	9	....	1	....
		F	49	8	....	....	....	....	8	....	....	....
104	Gangrene of the lung	M	12	....	....	....	....	....	....	....	....	....
		F	4	....	....	....	....	....	....	....	....	....
105	Asthma	M	39	....	1	....	....	....	1	....	....	....
		F	37	1	....	....	....	....	1	1	....	....
106	Pulmonary emphysema	M	8	2	....	....	....	....	2	....	....	1
		F	6	....	....	....	....	1	1	....	....	....
107	Other diseases of the respiratory system (tuberculosis excepted)	M	41	1	....	1	....	....	2	1	....	1
		F	29	....	....	....	....	....	....	1	1	2
a	Chronic interstitial pneumonia (including occupational diseases of the lung)	M	1	....	....	....	....	....	....	....	....	....
		F	1	....	....	....	....	....	....	....	....	1
b	Diseases of the mediastinum	M	....	....	....	....	....	....	....	....	....	....
		F	1	....	....	....	....	....	....	....	....	....
c	Others under this title	M	40	1	....	1	....	....	2	1	....	1
		F	27	....	....	....	....	....	....	1	1	1
	VI. Diseases of the digestive system	T	5,563	1,865	352	126	88	45	2,476	141	108	104
		M	2,998	1,043	195	71	58	26	1,393	74	61	62
		F	2,565	822	157	55	30	19	1,083	67	47	42
108	Diseases of the mouth and annexa	M	20	3	1	....	....	....	4	....	1	....
		F	20	5	....	....	....	1	6	....	....	....
109	Diseases of the pharynx and tonsils (including adenoid vegetations)	M	110	5	4	5	8	6	28	14	9	8
		F	85	3	1	1	4	....	9	17	8	5
a	Adenoid vegetations	M	4	....	....	....	....	....	....	....	....	....
		F	2	....	....	....	....	....	....	2	....	....
b	Septic sore throat	M	24	....	1	....	4	....	5	4	1	1
		F	26	1	1	1	....	....	3	7	2	2
c	Others under this title	M	82	5	3	5	4	6	23	10	8	7
		F	57	2	....	....	4	....	6	8	6	3
110	Diseases of the esophagus	M	9	....	....	....	....	....	....	....	....	....
		F	6	....	....	1	....	....	1	....	....	....
111	Ulcer of the stomach and duodenum	M	179	....	....	....	....	....	....	....	....	2
		F	63	....	....	....	....	....	....	....	....	....
a	Ulcer of the stomach	M	135	....	....	....	....	....	....	....	....	2
		F	52	....	....	....	....	....	....	....	....	....
b	Ulcer of the duodenum	M	44	....	....	....	....	....	....	....	....	....
		F	11	....	....	....	....	....	....	....	....	....

stillbirths) by each cause and class of causes according to sex and age of decedent: **1921 — (Cont'd)**

AGE OF—

20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years	50–54 years	55–59 years	60–64 years	65–69 years	70–74 years	75–79 years	80–84 years	85–89 years	90–94 years	95–99 years	100 years and over	Age unknown	Int'l List No. (Rev. of 1920)
....	....	....	3	1	2	....	6	7	5	9	11	17	7	3	....	....	....	b
....	....	....	....	2	....	2	5	5	5	16	15	18	6	3	1	....	....	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	c
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
....	....	....	....	....	2	3	2	1	5	5	9	13	8	1	1	....	....	d
....	....	....	1	1	....	2	1	4	1	5	10	12	11	8	1	....	....	
2	2	11	16	20	12	26	34	42	48	59	57	44	23	5	2	....	....	100
12	6	13	13	16	18	23	25	49	59	66	59	72	34	12	4	....	....	
2	2	11	15	19	12	25	34	41	46	56	56	42	23	5	2	....	....	a
12	6	13	12	16	18	22	25	48	56	62	58	71	33	11	3	....	....	
....	....	-	1	1	....	1	....	1	2	3	1	2	....	....	....	....	....	b
....	....	-	1	....	....	1	....	1	3	4	1	1	1	1	1	....	....	
37	41	54	70	85	90	73	85	123	105	84	73	53	27	8	1	....	....	101
22	23	43	36	54	52	59	69	108	91	90	84	72	41	15	3	1	....	
30	38	50	66	74	76	70	77	118	94	73	62	47	20	8	1	....	....	a
20	22	35	33	50	48	57	64	97	86	80	75	61	37	6	1	1	....	
7	3	4	4	11	14	3	8	5	11	11	11	6	7	....	....	....	....	b
2	1	8	3	4	4	2	5	6	5	10	9	11	4	9	2	....	....	
2	1	4	5	5	6	11	8	8	7	8	4	1	2	1	....	....	....	102
1	6	4	7	4	5	5	2	5	9	4	9	5	1	1	....	....	1	
....	1	1	2	3	....	1	2	3	2	3	5	9	7	5	....	....	....	103
1	....	....	....	3	1	1	1	....	2	3	5	7	11	3	2	1	....	
2	....	....	....	2	....	1	1	2	1	2	....	1	....	....	....	....	....	104
....	....	....	....	....	....	1	....	....	2	....	....	....	....	1	....	....	....	
1	1	2	....	2	3	5	6	7	5	3	2	1	....	....	....	....	....	105
....	....	2	2	....	3	3	4	6	5	3	3	1	3	....	....	....	....	
....	....	....	....	....	....	1	....	1	....	1	1	....	1	....	....	....	....	106
....	....	....	....	1	1	....	....	....	....	2	1	....	....	....	....	....	....	
2	5	2	2	2	1	3	5	2	9	2	1	1	....	....	....	....	....	107
1	2	2	1	2	3	3	4	2	1	3	1	....	....	....	....	....	....	
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	a
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	b
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	
2	5	2	2	2	1	3	5	2	8	2	1	1	....	....	....	....	....	c
1	2	2	1	2	2	3	4	2	1	3	1	....	....	....	....	....	....	
98	116	144	174	189	216	270	270	244	267	218	237	162	87	25	14	1	2	
49	52	72	89	101	126	150	151	147	120	121	111	66	35	11	6	....	1	
49	64	72	85	88	90	120	119	97	147	97	126	96	52	14	8	1	1	
....	....	1	2	2	3	....	2	3	....	....	....	2	....	....	....	....	....	108
1	....	1	....	3	2	1	....	1	1	....	....	3	1	....	....	....	....	
6	3	5	8	6	7	5	2	1	1	....	2	1	2	1	1	....	....	109
4	3	2	6	8	1	2	7	2	4	4	1	2	....	....	....	....	....	
....	....	1	....	....	1	1	....	....	....	....	1	....	....	....	....	....	....	a
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
2	1	1	2	2	3	1	....	1	....	....	....	....	....	....	....	....	....	b
2	1	....	4	1	1	1	1	....	....	1	....	....	....	....	....	....	....	
4	2	3	6	4	3	3	2	....	1	....	1	1	2	1	1	....	....	c
2	2	2	2	7	....	1	6	2	4	3	1	2	....	....	....	....	....	
....	....	....	....	....	....	....	1	2	1	3	1	1	....	....	....	....	....	110
....	....	....	....	....	2	....	....	....	1	....	2	....	....	....	....	....	....	
5	7	15	13	20	17	29	21	16	14	8	6	4	2	....	....	....	....	111
3	4	6	4	3	3	7	4	4	7	9	5	3	1	....	....	....	....	
5	5	8	10	15	13	22	17	9	13	5	5	4	2	....	....	....	....	a
2	3	5	3	3	3	5	3	4	6	6	5	3	1	....	....	....	....	
....	2	7	3	5	4	7	4	7	1	3	1	....	....	....	....	....	....	b
1	1	1	1	....	....	2	1	....	1	3	....	....	....	....	....	....	....	

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5–9 years	10–14 years	15–19 years
	Diseases of the digestive system— (*Concluded.*)											
112	Other diseases of the stomach (cancer excepted)	M	203	69	7	3	1	2	82	4	....	....
		F	179	50	6	6	2	1	65	4	....	....
113	Diarrhea and enteritis (under 2 years of age)	M	1,088	918	170	....	....	....	1,088	....	....	....
		F	877	734	143	....	....	....	877	....	....	....
114	Diarrhea and enteritis (over 2 years of age)	M	252	....	....	51	34	13	98	18	8	5
		F	244	....	....	43	16	12	71	17	7	3
115	Ankylostomiasis	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
116	Diseases due to other intestinal parasites	M	1	....	....	1	....	....	1	....	....	....
		F	1	....	....	....	....	....	....	1	....	....
117	Appendicitis and typhlitis	M	366	1	2	3	8	2	16	28	32	37
		F	278	....	1	1	4	3	9	22	25	24
118	Hernia, intestinal obstruction	M	275	35	7	3	6	2	53	6	5	4
		F	300	23	4	2	3	....	32	3	1	2
a	Hernia	M	116	6	2	....	....	....	8	1	....	1
		F	107	....	....	1	....	....	1	....	....	....
b	Intestinal obstruction	M	159	29	5	3	6	2	45	5	5	3
		F	193	23	4	1	3	....	31	3	1	2
119	Other diseases of the intestines	M	32	5	2	1	....	....	8	....	1	1
		F	43	2	....	1	....	....	3	....	....	3
120	Acute yellow atrophy of the liver	M	3	....	....	....	....	....	....	....	....	....
		F	20	....	....	....	....	....	....	1	....	....
121	Hydatid tumor of the liver	M	1	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
122	Cirrhosis of the liver	M	258	1	1	1	....	....	3	....	....	3
		F	136	1	....	....	....	....	1	....	1	....
a	Specified as alcoholic	M	10	....	....	....	....	....	....	....	....	....
		F	1	....	....	....	....	....	....	....	....	....
b	Not specified as alcoholic	M	248	1	1	1	....	....	3	....	....	3
		F	135	1	....	....	....	....	1	....	1	....
123	Biliary calculii	M	42	....	....	....	....	....	....	....	....	....
		F	116	....	....	....	....	....	....	....	....	....
124	Other diseases of the liver	M	96	....	....	1	....	1	2	....	2	....
		F	126	1	1	....	....	....	2	....	2	....
a	Infective jaundice, etc. (epidemic)	M	28	....	....	....	....	....	....	....	....	....
		F	31	....	....	....	....	....	....	....	....	....
b	Others under this title	M	68	....	....	1	....	1	2	....	2	....
		F	95	1	1	....	....	....	2	....	2	....
125	Diseases of the pancreas	M	13	....	....	....	....	....	....	....	1	....
		F	21	....	....	....	....	....	....	....	....	1
126	Peritonitis without specified cause	M	46	6	1	2	1	....	10	3	2	2
		F	49	3	1	....	1	2	7	2	3	4
127	Other diseases of the digestive system (cancer and tuberculosis excepted)	M	4	....	....	....	....	....	....	1	....	....
		F	1	....	....	....	....	....	....	....	....	....
	VII. Non-venereal diseases of the genitourinary system and annexa	T	6,129	50	8	8	8	9	83	32	41	36
		M	3,083	36	4	6	3	6	55	17	20	12
		F	3,046	14	4	2	5	3	28	15	21	24
128	Acute nephritis (including unspecified under 10 years of age)	M	215	25	1	4	2	3	35	10	11	3
		F	175	6	3	2	3	1	15	5	7	7
129	Chronic nephritis (including unspecified over 10 years of age)	M	2,472	4	....	1	....	2	7	5	7	8
		F	2,514	3	1	....	....	2	6	9	10	10
130	Chyluria	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
131	Other diseases of the kidneys and annexa (diseases of the kidneys in pregnancy excepted)	M										
		F	108	1	3	1	1	1	7	1	2	1
		M	66	5	....	....	2	....	7	1	1	3
132	Calculi of the urinary passages	F	25	....	....	....	....	....	....	1	....	....
		M	11	....	....	....	....	....	....	....	....	....
133	Diseases of the bladder	F	64	1	....	....	....	....	1	....	....	....
			17	....	....	....	....	....	....	....	1	....

stillbirths) by each cause and class of causes according to sex and age of decedent: **1921** — (Cont'd

Age of—																		Int'l List No. (Rev. of 1920
20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years	55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years	85-89 years	90-94 years	95-99 years	100 years and over	Age unknown	
1	2	1	1	3	6	11	18	14	12	12	9	14	9	4	.....	.....	.....	112
2	1	2	4	5	4	6	4	5	13	10	16	21	10	4	3	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	113
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	5	3	6	7	9	9	9	8	10	8	20	15	10	1	1	.....	.....	114
3	9	5	4	7	8	7	7	15	13	8	19	20	16	2	2	.....	1	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	115
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	116
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	22	30	28	25	29	29	15	25	7	10	6	3	.....	.....	.....	.....	.....	117
19	24	22	28	19	17	22	17	7	8	6	5	3	.....	1	.....	.....	.....	
9	4	9	11	12	16	14	25	14	19	24	26	13	6	4	.....	.....	1	118
7	5	13	9	20	14	25	28	19	35	23	33	16	12	2	.....	1	.....	
4	3	3	5	5	10	7	11	8	10	8	19	6	5	2	.....	.....	.....	a
2	.....	2	2	6	5	12	14	12	23	8	12	6	1	1	.....	.....	.....	
5	1	6	6	7	6	7	14	6	9	16	7	7	1	2	.....	.....	1	b
5	5	11	7	14	9	13	14	7	12	15	21	10	11	1	.....	1	.....	
.....	1	.....	3	2	.....	4	2	3	4	1	1	.....	1	.....	.....	.....	.....	119
.....	6	2	1	1	1	3	3	2	6	1	5	1	4	1	.....	.....	.....	
.....	.....	.....	1	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	120
4	1	3	1	1	.....	2	1	1	3	.....	.....	1	1	.....	.....	.....	.....	
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	121
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	1	5	4	11	19	33	33	36	37	36	27	4	4	1	1	.....	.....	122
.....	2	1	6	5	11	12	15	12	22	11	19	14	2	1	1	.....	.....	
.....	.....	.....	.....	1	3	.....	1	1	2	1	1	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	1	5	4	10	16	33	32	35	35	35	26	4	4	1	1	.....	.....	b
.....	2	1	6	5	11	12	14	12	22	11	19	14	2	1	1	.....	.....	
.....	.....	2	1	1	1	1	6	7	6	7	7	3	.....	.....	.....	.....	.....	123
.....	3	6	5	8	13	14	16	10	15	11	8	3	2	2	.....	.....	.....	
.....	3	.....	7	5	14	10	12	12	8	10	4	3	1	.....	3	.....	.....	124
1	5	5	5	6	9	14	11	14	17	11	12	7	2	1	2	.....	.....	
.....	1	.....	2	2	3	6	5	2	1	4	1	1	.....	.....	.....	.....	.....	a
1	1	.....	1	2	2	4	1	4	3	2	4	4	.....	1	1	.....	.....	
.....	2	.....	5	3	11	4	7	10	7	6	3	2	1	.....	3	.....	.....	b
.....	4	5	4	4	7	10	10	10	14	9	8	3	2	.....	1	.....	.....	
1	2	1	.....	1	3	2	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	125
.....	.....	1	4	2	3	3	2	2	1	1	.....	1	.....	.....	.....	.....	.....	
1	2	.....	4	5	1	2	4	5	1	2	.....	2	.....	.....	.....	.....	.....	126
5	1	3	8	.....	2	2	3	3	1	2	1	1	1	.....	.....	.....	.....	
.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	127
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
79	96	150	185	253	337	384	476	647	741	781	788	583	328	94	12	2	1	
29	27	52	68	99	149	173	271	321	384	431	435	317	165	49	8	1	.....	
50	69	98	117	154	188	211	205	326	357	350	353	266	163	45	4	1	1	
6	6	13	11	10	18	14	11	11	17	10	10	11	5	3	.....	.....	.....	128
4	11	14	10	17	13	17	15	10	5	9	8	4	4	.....	.....	.....	.....	
21	18	33	50	78	114	146	237	275	321	367	361	251	125	39	8	1	.....	129
22	27	44	58	98	137	161	175	302	344	328	330	255	153	41	4	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	130
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	2	4	5	5	8	6	8	12	11	8	17	5	5	.....	.....	.....	.....	131
3	4	6	3	4	4	3	3	4	.....	4	4	1	3	2	.....	1	.....	
.....	.....	1	1	1	5	2	1	2	5	2	3	1	.....	.....	.....	.....	.....	132
.....	1	2	.....	1	1	.....	1	1	1	.....	1	2	.....	.....	.....	.....	.....	
.....	.....	.....	1	3	3	2	2	6	7	6	8	10	11	4	.....	.....	.....	133
.....	.....	.....	.....	1	1	3	.....	.....	1	1	4	2	2	1	.....	.....	.....	

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths* (*exclusive*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5-9 years	10-14 years	15-19 years
	VII. Non-venereal diseases of the genitourinary system and annex —(*Con.c*)											
134	Diseases of the urethra, urinary abscess, etc.	M	9	1	....	....	....	....	1	....	....	....
		F	2	....	....	....	....	....	....	....	....	....
a	Stricture of the urethra	M	5	1	....	....	....	....	1	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
b	Others under this title	M	4	....	....	....	....	....	....	....	....	....
		F	2	....	....	....	....	....	....	....	....	....
135	Diseases of the prostate	M	182	....	....	....	....	....	....	....	....	....
136	Non-venereal diseases of the male genital organs	M	7	3	....	....	....	....	3	....	....	....
137	Cysts and other benign tumors of the ovary	F	43	....	....	....	....	....	....	....	1	
138	Salpingitis and pelvic abscess	F	95	....	....	....	....	....	....	....	1	4
139	Benign tumors of the uterus	F	86	....	....	....	....	....	....	....	....	....
140	Nonpuerperal uterine hemorrhage	F	4	....	....	....	....	....	....	....	....	....
141	Other diseases of the female genital organs	F	32	....	....	....	....	....	....	....	....	....
142	Nonpuerperal diseases of the breast (cancer excepted)	M	1	1	....	....	....	....	1	....	....	....
		F	1	....	....	....	....	....	....	....	....	....
	VIII. The puerperal state	F	650	....	....	....	....	....	....	....	....	34
143	Accidents of pregnancy	F	61	....	....	....	....	....	....	....	....	....
a	Abortion	F	25	....	....	....	....	....	....	....	....	....
b	Ectopic gestation	F	21	....	....	....	....	....	....	....	....	....
c	Others under this title	F	15	....	....	....	....	....	....	....	....	....
144	Puerperal hemorrhage	F	82	....	....	....	....	....	....	....	....	....
145	Other accidents of labor	F	70	....	....	....	....	....	....	....	....	4
a	Caesarean section	F	23	....	....	....	....	....	....	....	....	3
b	Other surgical operations	F	5	....	....	....	....	....	....	....	....	....
c	Others under this title	F	42	....	....	....	....	....	....	....	....	1
146	Puerperal septicemia	F	241	....	....	....	....	....	....	....	....	20
147	Puerperal phlegmasia alba dolens, embolus, etc.	F	29	....	....	....	....	....	....	....	....	....
148	Puerperal albuminuria and convulsions	F	165	....	....	....	....	....	....	....	....	10
149	Following childbirth (not otherwise defined)	F	2	....	....	....	....	....	....	....	....	....
150	Puerperal diseases of the breast	F	....	....	....	....	....	....	....	....	....	....
	IX. Diseases of the skin and cellular tissue	T	232	48	2	....	1	1	49	2	6	7
		M	140	26	2	....	....	....	28	1	1	4
		F	92	19	....	....	1	1	21	1	5	3
151	Gangrene	M	59	3	....	....	....	....	3	....	....	1
		F	30	2	....	....	....	....	2	....	1	....
152	Furuncle	M	35	6	1	....	....	....	7	1	....	....
		F	11	8	....	....	....	....	8	....	....	....
153	Acute abscess	M	29	7	1	....	....	....	8	....	....	2
		F	29	5	....	....	1	1	7	....	3	1
154	Other diseases of the skin and its annexa	M	17	10	....	....	....	....	10	....	1	1
		F	22	4	....	....	....	....	4	1	1	2
	X. Diseases of the bones and organs of locomotion	T	101	4	4	....	2	1	11	14	9	9
		M	61	3	2	....	1	1	7	8	5	6
		F	40	1	2	....	1	....	4	6	4	3
155	Diseases of the bones (tuberculosis excepted)	M	54	3	2	....	1	1	7	7	4	6
		F	34	1	1	....	1	....	3	6	4	3
156	Diseases of the joints (tuberculosis and rheumatism excepted)	M	7	....	....	....	....	....	....	1	1	....
		F	3	....	....	....	....	....	....	....	....	....
157	Amputations	M	....	....	....	....	....	....	....	....	....	....
		F	1	....	1	....	....	....	1	....	....	....
158	Other diseases of the organs of locomotion	M	....	....	....	....	....	....	....	....	....	....
		F	2	....	....	....	....	....	....	....	....	....

stillbirths) by each cause and class of causes according to sex and age of decedent: 1921 — (Cont'd)

AGE OF —																		Int'l List No. (Rev. of 1920)
20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years	55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years	85-89 years	90-94 years	95-99 years	100 years and over	Age unknown	
1	1	.....	.....	2	1	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	134
.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	1	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	
.....	.....	1	.....	.....	.....	8	11	13	21	36	36	39	19	3	.....	.....	.....	135
.....	.....	.....	.....	.....	.....	.....	1	.....	1	2	.....	.....	.....	.....	.....	.....	.....	136
2	2	3	4	4	4	6	4	6	4	1	.....	1	1	.....	.....	.....	.....	137
12	17	20	20	5	10	4	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	138
.....	2	6	16	20	12	15	6	1	.....	3	3	1	.....	1	.....	.....	.....	139
1	.....	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	140
1	5	2	5	2	5	2	1	2	2	4	1	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	141
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	142
111	162	158	130	46	8	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	19	21	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	143
4	6	12	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
2	7	4	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
.....	6	5	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	c
15	15	15	24	12	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	144
5	13	18	17	9	3	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	145
1	1	5	7	3	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	.....	3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
4	12	10	8	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	c
51	62	58	37	12	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	146
6	8	7	7	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	147
26	45	39	31	12	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	148
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	149
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	150
3	4	9	8	5	11	9	11	7	7	19	20	25	22	6	1	1	.....	
2	4	6	5	3	9	7	7	3	5	14	8	17	12	2	1	1	.....	
1	.....	3	3	2	2	2	4	4	2	5	12	8	10	4	.....	.....	.....	
.....	1	.....	1	1	.....	3	2	1	2	12	5	16	8	2	1	.....	.....	151
.....	.....	.....	.....	.....	.....	.....	1	1	2	4	6	3	6	4	.....	.....	.....	
2	1	3	2	2	4	2	4	2	.....	1	2	1	1	.....	.....	.....	.....	152
.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	2	3	2	.....	4	2	1	.....	3	1	.....	.....	1	.....	.....	.....	.....	153
.....	.....	3	2	2	.....	1	1	2	.....	1	3	2	1	.....	.....	.....	.....	
.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	2	.....	.....	1	.....	154
1	.....	.....	1	.....	1	.....	1	1	.....	.....	3	3	3	.....	.....	.....	.....	
2	5	4	7	5	7	2	6	3	7	7	3	.....	.....	.....	.....	.....	.....	
1	4	3	6	3	2	2	4	3	2	4	1	.....	.....	.....	.....	.....	.....	
1	1	1	1	2	5	.....	2	.....	5	3	2	.....	.....	.....	.....	.....	.....	
1	3	1	6	3	2	2	3	3	2	3	1	.....	.....	.....	.....	.....	.....	155
1	1	1	1	1	3	.....	2	.....	5	1	2	.....	.....	.....	.....	.....	.....	
.....	1	2	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	156
.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	157
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	158
.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT							
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5-9 years	10-14 years	15-19 years
	XI. Malformations	T	832	785	24	8	2	1	820	6	3	2
		M	454	428	15	4	2	....	449	5	....	....
		F	378	357	9	4	....	1	371	1	3	2
159	Congenital malformations (stillbirth excepted)	M	454	428	15	4	2	....	449	5	....	....
		F	378	357	9	4	....	1	371	1	3	2
a	Hydrocephalus	M	47	37	7	1	1	....	46	1	....	....
		F	34	28	2	1	....	....	31	1	1	1
b	Congenital malformation of the heart	M	284	271	7	1	1	....	280	4	....	....
		F	210	202	5	1	....	....	208	....	1	....
c	Others under this title	M	123	120	1	2	....	....	123	....	....	....
		F	134	127	2	2	....	1	132	....	1	1
	XII. Early infancy	T	3,560	3,557	....	....	....	....	3,557	....	....	....
		M	2,014	2,012	....	....	....	....	2,012	....	....	....
		F	1,546	1,545	....	....	....	....	1,545	....	....	....
160	Congenital debility, icterus and sclerema	M	276	275	....	....	....	....	275	....	....	....
		F	217	217	....	....	....	....	217	....	....	....
161	Premature birth; injuries at birth	M	1,591	1,590	....	....	....	....	1,590	....	....	....
		F	1,212	1,212	....	....	....	....	1,212	....	....	....
a	Premature birth	M	1,226	1,225	....	....	....	....	1,225	....	....	....
		F	960	960	....	....	....	....	960	....	....	....
b	Injuries at birth	M	365	365	....	....	....	....	365	....	....	....
		F	252	252	....	....	....	....	252	....	....	....
162	Other diseases peculiar to early infancy	M	144	144	....	....	....	....	144	....	....	....
		F	114	113	....	....	....	....	113	....	....	....
163	Lack of care	M	3	3	....	....	....	....	3	....	....	....
		F	3	3	....	....	....	....	3	....	....	....
	XIII. Old age	T	485	....	....	....	....	....	....	....	....	....
		M	196	....	....	....	....	....	....	....	....	....
		F	289	....	....	....	....	....	....	....	....	....
164	Senility	M	196	....	....	....	....	....	....	....	....	....
		F	289	....	....	....	....	....	....	....	....	....
	XIV. External causes	T	4,513	107	74	78	81	61	401	264	168	257
		M	3,196	48	36	36	46	31	197	185	136	214
		F	1,317	59	38	42	35	30	204	79	32	43
	Total suicides	M	469	....	....	....	....	....	....	....	3	8
		F	142	....	....	....	....	....	....	....	1	6
165	Suicide by solid or liquid poisons	M	19	....	....	....	....	....	....	....	....	....
		F	17	....	....	....	....	....	....	....	....	1
166	Suicide by corrosive substances	M	42	....	....	....	....	....	....	....	....	....
		F	22	....	....	....	....	....	....	....	....	3
167	Suicide by poisonous gas	M	38	....	....	....	....	....	....	....	....	....
		F	19	....	....	....	....	....	....	....	....	1
168	Suicide by hanging or strangulation	M	143	....	....	....	....	....	....	....	1	5
		F	28	....	....	....	....	....	....	....	1	....
169	Suicide by drowning	M	26	....	....	....	....	....	....	....	....	....
		F	28	....	....	....	....	....	....	....	....	....
170	Suicide by firearms	M	149	....	....	....	....	....	....	....	2	2
		F	14	....	....	....	....	....	....	....	....	1
171	Suicide by cutting or piercing instruments	M	40	....	....	....	....	....	....	....	....	1
		F	4	....	....	....	....	....	....	....	....	....
172	Suicide by jumping from high places	M	9	....	....	....	....	....	....	....	....	....
		F	6	....	....	....	....	....	....	....	....	....
173	Suicide by crushing	M	2	....	....	....	....	....	....	....	....	....
		F	1	....	....	....	....	....	....	....	....	....
174	Other suicides	M	1	....	....	....	....	....	....	....	....	....
		F	3	....	....	....	....	....	....	....	....	....

stillbirths) by each cause and class of causes according to sex and age of decedent: **1921 — (Cont'd)**

Age of—																		Int'l List No. (Rev. of 1920)
20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years	50–54 years	55–59 years	60–64 years	65–69 years	70–74 years	75–79 years	80–84 years	85–89 years	90–94 years	95–99 years	100 years and over	Age unknown	
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	159
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	c
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	160
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	161
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	a
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	162
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	163
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	2	1	5	8	30	77	132	99	101	23	7	.....	
.....	.....	.....	.....	.....	.....	1	.....	3	4	15	38	58	37	30	7	3	.....	
.....	.....	.....	.....	.....	.....	1	1	2	4	15	39	74	62	71	16	4	.....	
.....	.....	.....	.....	.....	.....	1	.....	3	4	15	38	58	37	30	7	8	.....	164
.....	.....	.....	.....	.....	.....	1	1	2	4	15	39	74	62	71	16	4	.....	
307	298	300	285	285	259	286	216	243	209	190	199	154	131	35	17	1	8	
249	242	248	237	239	206	234	164	179	127	121	84	61	46	13	7	.....	7	
58	56	52	48	46	53	52	52	64	82	69	115	93	85	22	10	1	1	
29	37	26	44	55	33	62	43	48	32	23	14	4	4	2	1	.....	1	
11	13	14	10	18	16	13	12	13	9	2	1	3	.....	.....	.....	.....	.....	
3	3	1	3	2	1	3	1	1	.....	.....	.....	.....	.....	1	.....	.....	.....	165
4	1	2	1	3	.....	2	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	
5	4	3	5	5	4	4	4	2	2	3	.....	.....	.....	.....	.....	.....	.....	166
3	6	2	1	2	.....	2	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	
3	2	.....	4	5	2	8	7	2	3	1	.....	.....	1	.....	.....	.....	.....	167
1	.....	2	1	2	4	3	2	2	.....	1	.....	.....	.....	.....	.....	.....	.....	
6	8	7	12	12	14	17	15	18	12	6	6	1	1	1	1	.....	.....	168
.....	.....	2	2	3	5	3	3	5	3	.....	.....	1	.....	.....	.....	.....	.....	
.....	1	2	1	6	1	3	1	5	2	3	.....	.....	.....	.....	.....	.....	1	169
.....	4	3	2	3	2	2	3	2	3	1	1	2	.....	.....	.....	.....	.....	
11	14	10	15	17	8	22	11	14	7	9	3	2	2	.....	.....	.....	.....	170
3	1	2	2	2	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	2	3	4	6	2	4	3	6	5	.....	3	1	.....	.....	.....	.....	.....	171
.....	.....	.....	.....	.....	3	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	2	.....	.....	1	1	1	1	.....	1	.....	2	.....	.....	.....	.....	.....	.....	172
.....	.....	.....	.....	3	.....	.....	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	173
.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	174
.....	1	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	

Table 40 — STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5–9 years	10–14 years	15–19 years
	XIV. External causes — (*Concluded*) Total accidents	M	2,585	36	36	35	46	31	184	185	132	204
		F	1,119	42	38	41	35	30	186	76	27	35
175	Poisoning by food	M	21	1	3	....	....	3	7	4	1	....
		F	13	1	2	1	....	1	5	2	1	....
176	Poisoning by venomous animals	M	3	....	....	....	....	....	....	....	....	....
		F	3	1	....	....	....	1	2	....	....	....
177	Other acute accidental poisonings	M	32	2	5	5	3	....	15	....	1	....
		F	45	3	10	3	5	1	22	1	....	1
178	Conflagration	M	23	....	3	1	....	1	5	1	....	....
		F	18	2	....	....	1	3	6	4	....	....
179	Accidental burns (conflagration excepted)	M	108	3	11	14	14	6	48	9	1	4
		F	181	2	15	28	17	13	75	18	1	5
180	Accidental mechanical suffocation	M	44	23	....	....	2	....	25	2	1	2
		F	22	16	1	1	1	....	19	....	....	....
181	Accidental absorption of irrespirable or poisonous gas	M	65	1	1	....	....	1	3	2	3	3
		F	28	3	....	....	....	....	3	....	....	....
182	Accidental drowning	M	439	....	5	2	6	4	17	45	47	85
		F	64	....	2	2	....	....	4	8	10	13
183	Accidental traumatism by firearms (war wounds excepted)	M	69	....	....	....	1	....	1	4	6	15
		F	8	....	1	1	1	1	4	....	1	....
184	Accidental traumatism by cutting or piercing instruments	M	19	....	....	....	....	....	....	....	....	2
		F	1	....	....	....	....	....	....	....	....	....
185	Accidental traumatism by fall	M	374	2	5	4	4	....	15	7	12	7
		F	397	5	1	1	2	1	10	....	2	1
186	Accidental traumatism in mines and quarries	M	13	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
a	Mines	M	11	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
b	Quarries	M	2	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
187	Accidental traumatism by machinery	M	75	....	....	....	....	....	....	1	2	8
		F	....	....	....	....	....	....	....	....	....	....
188	Accidental traumatism by other forms of crushing	M	1,043	1	2	9	15	14	41	100	48	64
		F	283	2	3	3	8	7	23	42	11	14
a	Railroad accidents	M	275	....	1	....	....	1	2	8	4	17
		F	37	....	....	1	1	....	2	2	1	....
b	Street car accidents	M	48	....	....	....	1	....	1	4	1	2
		F	12	....	....	....	....	....	....	2	....	2
c	Automobile accidents	M	557	1	1	7	13	11	33	76	39	29
		F	223	1	3	2	7	7	20	38	8	11
d	Aeroplane and balloon accidents	M	10	....	....	....	....	....	....	....	....	2
		F	1	....	....	....	....	....	....	....	....	....
e	Injuries by other vehicles	M	100	....	....	1	1	2	4	9	3	9
		F	10	1	....	....	....	....	1	....	2	1
f	Landslide, other crushing	M	53	....	....	1	....	....	1	3	1	5
		F	....	....	....	....	....	....	....	....	....	....
189	Injuries by animals (not poisoning)	M	27	....	....	....	....	....	....	1	2	5
		F	3	....	1	....	....	....	1	....	....	....
190	Wounds of war	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
191	Execution of civilians by belligerent armies	M	....	....	....	....	....	....	....	....	....	....
		F	....	....	....	....	....	....	....	....	....	....
192	Starvation (deprivation of food and water)	M	1	1	....	....	....	....	1	....	....	....
		F	2	....	....	....	....	....	....	....	....	....
193	Excessive cold	M	10	....	....	....	....	....	....	....	1	....
		F	4	....	....	....	....	....	....	....	....	....

***stillbirths) by each cause and class of causes according to sex and age of decedent:* 1921—(Cont'd)**

Age of —																		Int'l List No. (Rev. of 1920)
20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years	55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years	85-89 years	90-94 years	95-99 years	100 years and over	Age unknown	
211	185	196	177	167	161	164	113	128	93	96	70	56	42	11	6	.....	4	175
42	37	34	34	24	36	38	38	51	73	67	114	89	85	22	10	1	.....	
																		176
.....	.....	.....	1	1	1	1	1	1	.....	1	1	.....	1	.....	.....	.....	.....	
.....	.....	.....	1	.....	.....	1	.....	.....	1	.....	1	.....	1	.....	.....	.....	.....	177
1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	2	1	2	5	2	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	178
2	5	5	4	2	.....	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	
																		179
.....	.....	2	4	3	1	.....	.....	1	1	3	1	.....	1	.....	.....	.....	.....	
1	2	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	2	.....	.....	.....	.....	180
5	5	5	2	4	6	4	2	1	2	4	3	.....	2	.....	1	.....	.....	
5	4	5	5	5	9	4	3	9	10	7	8	5	2	1	.....	.....	.....	
1	1	1	1	1	.....	3	.....	3	1	1	.....	.....	1	.....	.....	.....	.....	
.....	1	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	
3	2	6	4	7	5	7	5	2	3	6	1	2	.....	.....	.....	.....	1	181
2	3	2	.....	.....	.....	.....	3	2	2	3	3	1	4	.....	.....	.....	.....	
69	28	32	24	28	18	14	9	10	6	3	1	1	2	.....	.....	.....	.....	182
7	4	4	1	1	2	1	1	1	1	.....	4	1	1	.....	.....	.....	.....	
10	7	6	3	6	1	1	1	3	3	1	.....	.....	1	.....	.....	.....	.....	183
.....	.....	.....	.....	.....	2	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
2	2	2	1	1	2	2	.....	.....	1	.....	1	1	1	1	.....	.....	.....	184
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	9	15	11	16	22	25	31	22	31	26	35	38	30	9	4	.....	.....	185
2	.....	1	.....	2	6	8	11	20	36	41	80	74	71	21	10	1	.....	
1	2	5	2	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	186
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1	1	4	2	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	b
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
10	7	9	5	8	5	6	7	4	3	.....	.....	.....	.....	.....	.....	.....	.....	187
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
76	95	93	96	68	72	78	44	64	33	37	20	8	3	1	.....	.....	2	188
22	16	15	18	12	15	19	18	13	14	13	14	3	1	.....	.....	.....	.....	
22	28	32	26	23	24	27	16	18	11	11	4	1	.....	.....	.....	.....	1	a
5	3	1	1	1	3	5	2	1	2	4	3	1	.....	.....	.....	.....	.....	
4	4	4	2	1	4	7	2	4	1	3	3	.....	1	.....	.....	.....	.....	b
.....	1	1	.....	.....	.....	1	1	1	2	.....	.....	1	.....	.....	.....	.....	.....	
37	45	38	51	34	36	35	23	28	12	22	10	6	2	.....	.....	.....	1	c
16	11	12	16	11	12	13	14	10	10	9	10	1	1	.....	.....	.....	.....	
1	4	1	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	d
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
10	8	14	9	4	3	5	3	8	8	1	.....	1	.....	1	.....	.....	.....	e
.....	1	1	1	.....	.....	.....	1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	
2	6	4	8	6	5	4	.....	5	1	.....	2	.....	.....	.....	.....	.....	.....	f
1	.....	1	2	4	.....	4	2	2	1	1	1	.....	.....	.....	.....	.....	.....	189
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	190
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	191
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	192
.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	1	.....	.....	3	2	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	193
.....	.....	1	1	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Table 40—STATE OF NEW YORK (exclusive of New York City): *Deaths (exclusive of*

Int'l List No. (Rev. of 1920)	CAUSE OF DEATH	Sex	Total deaths	DEATHS AT								
				Under 1 year	1 year	2 years	3 years	4 years	Total under 5 years	5-9 years	10-14 years	15-19 years
	External causes — (*Concluded*)											
194	Excessive heat	M	43	2	.....	.....	1	1	4	.....	.....	1
		F	26	4	1	.....	.....	1	6	1	.....	1
195	Lightning	M	10	.....	.....	.....	.....	.....	.....	.....	1	.....
		F	4	.....	1	.....	.....	.....	1	.....	.....	.....
196	Other accidental electric shocks	M	44						.....	1	2	6
		F	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total homicides	M	142	12	.....	1	.....	.....	13	.....	1	2
		F	56	17	.....	1	.....	.....	18	3	4	2
197	Homicides by firearms	M	86	.....	.....	.....	.....	.....	.....	.....	1	1
		F	24	.....	.....	1	.....	.....	1	2	3	1
198	Homicides by cutting or piercing instruments	M	15	.....	.....	.....	.....	.....	.....	.....	.....	.....
		F	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
199	Homicides by other means	M	29	1	.....	1	.....	.....	2	.....	.....	1
		F	10	.....	.....	.....	.....	.....	.....	1	1	1
200	Infanticide (murder of infants less than 1 year of age)	M	12	11	.....	.....	.....	.....	11	.....	.....	.....
		F	18	17	.....	.....	.....	.....	17	.....	.....	.....
201	Fracture (cause not specified)	M	17	.....	.....	.....	.....	.....	.....	2	1	.....
		F	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
202	Other external violence (cause specified)	M	70	.....	1	.....	.....	1	2	2	3	1
		F	11	3	.....	1	.....	1	5	.....	1	.....
a	Legal electrocution	M	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
		F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
b	Others under this title	M	59	.....	1	.....	.....	1	2	2	3	1
		F	11	3	.....	1	.....	1	5	.....	1	.....
203	Other external violence (cause not specified)	M	35	.....	.....	.....	.....	.....	.....	4	.....	1
		F	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
	XV Ill-defined causes	T	77	14	9	3	.....	.....	26	.....	1	.....
		M	46	8	6	3	.....	.....	17	.....	1	.....
		F	31	6	3	.....	.....	.....	9	.....	.....	.....
204	Sudden death	M	5	.....	.....	.....	.....	.....	.....	.....	.....	.....
		F	4	1	.....	.....	.....	.....	1	.....	.....	.....
205	Cause of death not specified or ill-defined	M	41	8	6	3	.....	.....	17	.....	1	.....
		F	27	5	3	.....	.....	.....	8	.....	.....	.....

stillbirths) by each cause and class of causes according to sex and age of decedent: **1921—(Conc'd)**

AGE OF—																		Int'l List No (Rev of 1920)
20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years	50–54 years	55–59 years	60–64 years	65–69 years	70–74 years	75–79 years	80–84 years	85–89 years	90–94 years	95–99 years	100 years and over	Age unknown	
1	.....	.....	2	2	5	7	2	4	4	5	1	4	.....	.....	1	.....	.....	194
.....	.....	.....	2	1	.....	.....	1	1	5	.....	2	4	2	.....	.....	.....	.....	
2	1	4	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	195
.....	.....	1	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
6	9	3	6	3	3	2	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	196
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	20	26	16	17	12	8	8	3	2	2	.....	1	.....	.....	.....	.....	2	
5	6	4	4	4	1	1	2	.....	.....	.....	.....	1	.....	.....	.....	.....	1	
5	18	22	10	12	8	5	3	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	197
2	4	3	2	4	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
4	2	1	3	1	1	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	198
.....	1	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	3	3	4	3	2	4	3	1	1	.....	1	.....	.....	.....	.....	1	199
3	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	200
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	
2	2	1	1	2	2	.....	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	201
.....	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
8	10	7	7	8	7	3	4	5	1	8	2	1	.....	.....	.....	.....	1	202
.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	
3	2	2	2	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	a
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	8	5	5	2	7	3	3	5	1	3	2	1	.....	.....	.....	.....	1	b
.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	
3	2	2	3	2	5	3	2	8	1	2	2	3	.....	.....	.....	.....	.....	203
.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	
3	2	1	1	5	10	2	3	2	5	4	8	2	1	.....	1	.....	.....	
1	1	.....	1	2	10	1	2	1	2	1	4	1	1	.....	.....	.....	.....	
2	1	1	.....	3	.....	1	1	1	3	8	4	1	.....	.....	1	.....	.....	
.....	.....	.....	.....	.....	1	1	.....	.....	1	.....	1	.....	1	.....	.....	.....	.....	204
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	
1	1	.....	1	2	9	.....	2	1	1	1	8	1	.....	.....	.....	.....	.....	205
2	1	1	.....	8	.....	1	1	1	2	2	8	1	.....	.....	1	.....	.....	

Table 41 — STATE OF NEW YORK (exclusive of New York City): ***Deaths (exclusive of decedents:***

Line number	AGE	Sex	All deaths	WHIT								
					COUNTRY OF							
							Foreig					
				Total	United States	Total	England, Scotland, Wales	Ireland	Germany (excludes German Poland)	German Poland	Italy	Russia (excludes Russian Poland)
1	**Total**	....	**65,853**	**64,830**	**49,986**	**14,398**	**1,813**	**3,138**	**3,171**	**18**	**1,364**	**625**
2	**Males**	....	**33,686**	**33,160**	**25,356**	**7,492**	**937**	**1,331**	**1,660**	**7**	**811**	**374**
3	**Females**	....	**32,167**	**31,670**	**24,630**	**6,906**	**826**	**1,807**	**1,511**	**11**	**553**	**251**
4	Under 1 year	M	4,793	4,707	4,699	5	1	......	......	......	1	......
5		F	3,729	3,660	3,644	11	......	......	1	......	6	1
6	1 year	M	669	652	641	9	......	......	......	......	3	......
7		F	616	594	587	7	1	......	......	......	3	......
8	2 years	M	351	345	341	4	......	......	......	......	3	......
9		F	296	286	285	1	......	......	......	......	......	......
10	3 years	M	266	264	261	3	......	......	......	......	1	......
11		F	225	223	222	1	......	......	......	......	1	......
12	4 years	M	219	218	216	2	......	......	......	......	......	......
13		F	185	184	184	......	......	......	......	......	......	......
14	**Total under 5 years**	**M**	**6,298**	**6,186**	**6,158**	**23**	**1**	......	......	......	**8**	......
15		**F**	**5,051**	**4,947**	**4,922**	**20**	**1**	......	**1**	......	**10**	**1**
16	5– 9 years	M	756	745	734	10	......	......	1	......	3	......
17		F	598	595	581	12	......	......	......	......	3	......
18	10–14 years	M	509	503	472	28	......	1	1	......	13	......
19		F	422	414	394	19	1	......	......	......	4	1
20	15–19 years	M	635	624	564	56	4	......	2	......	24	6
21		F	551	540	494	46	3	......	1	......	15	7
22	20–24 years	M	770	743	600	130	9	5	1	......	38	20
23		F	836	812	698	111	4	7	3	......	36	12
24	25–29 years	M	875	837	588	236	12	4	6	......	71	24
25		F	936	900	688	209	9	10	9	......	49	20
26	30–34 years	M	991	968	616	336	28	16	18	......	88	40
27		F	982	952	721	228	10	19	11	2	57	21
28	35–39 years	M	1,160	1,117	719	376	30	20	25	......	92	51
29		F	1,044	1,012	756	252	20	27	20	1	50	16
30	40–44 years	M	1,315	1,279	848	410	30	31	58	4	81	44
31		F	1,138	1,103	822	278	24	33	37	......	50	21
32	45–49 years	M	1,530	1,499	1,040	439	28	51	76	......	59	32
33		F	1,371	1,343	1,007	334	38	66	45	1	40	21
34	50–54 years	M	1,846	1,800	1,255	516	55	80	74	1	65	40
35		F	1,672	1,651	1,209	435	48	100	81	2	41	24
36	55–59 years	M	2,139	2,111	1,448	644	78	91	134	......	72	31
37		F	1,884	1,857	1,356	494	69	118	105	......	46	23
38	60–64 years	M	2,649	2,630	1,909	689	99	116	164	2	64	26
39		F	2,428	2,396	1,781	605	63	161	132	1	54	24
40	65–69 years	M	2,891	2,866	2,076	758	109	142	219	......	62	21
41		F	2,726	2,703	1,956	739	96	222	161	1	37	15
42	70–74 years	M	3,015	2,995	2,099	868	156	212	276	......	30	16
43		F	2,971	2,934	2,019	897	120	297	224	3	24	24
44	75–79 years	M	2,800	2,775	1,892	863	131	242	268	......	26	6
45		F	3,053	3,025	2,098	910	119	302	292	......	17	7
46	80–84 years	M	2,023	2,015	1,363	641	118	193	190	......	10	7
47		F	2,391	2,384	1,679	689	117	222	192	......	11	10
48	85–89 years	M	1,053	1,041	714	320	67	81	109	......	4	6
49		F	1,434	1,427	983	428	59	142	135	......	7	2
50	90–94 years	M	330	327	203	121	27	40	34	......	1	2
51		F	524	520	366	152	21	57	47	......	2	1
52	95–99 years	M	70	70	50	20	4	4	4	......	......	......
53		F	123	123	81	40	4	19	14	......	......	......
54	100 years and over	M	10	9	5	4	......	1	......	......	......	1
55		F	17	17	12	4	......	2	1	......	......	......
56	Age unknown	M	21	20	3	4	1	1	......	......	......	1
57		F	15	15	7	4	......	3	......	......	......	1

stillbirths) by age and sex according to color and country of birth of foreign-born white
1921

DECEDENTS										COLORED DECEDENTS				
BIRTH														
Country														
Russian Poland	Austria (excludes Austrian Poland)	Austrian Poland	Hungary	Poland (not specified)	Total Poland	Canada	Norway, Sweden, Denmark	Other foreign countries	Country not stated	Total	Negro	American Indian	Chinese, Japanese, and others	Line number
107	440	50	135	758	933	1,681	420	678	446	1,023	947	69	7	1
70	270	29	74	443	549	786	244	406	312	526	487	33	6	2
37	170	21	61	315	384	895	176	272	134	497	460	36	1	3
.....	.....	.....	.....	.....	.....	3	.....	.....	3	86	80	5	1	4
.....	.....	.....	.....	.....	.....	3	.....	.....	5	69	66	3	.....	5
.....	1	.....	1	.....	.....	4	.....	.....	2	17	16	1	.....	6
.....	.....	.....	.....	.....	.....	3	.....	.....	.....	22	18	3	1	7
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	6	6	.....	.....	8
.....	.....	.....	.....	.....	.....	1	.....	.....	.....	10	9	1	.....	9
.....	.....	.....	.....	.....	.....	2	.....	.....	.....	2	1	1	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2	.....	.....	11
.....	.....	.....	.....	.....	.....	2	.....	.....	.....	1	1	.....	.....	12
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	13
.....	1	.....	1	.....	.....	12	.....	.....	5	112	104	7	1	14
.....	.....	.....	.....	.....	.....	7	.....	.....	5	104	96	7	1	15
.....	.....	.....	.....	.....	.....	4	.....	2	1	11	10	1	.....	16
.....	1	.....	.....	1	1	6	.....	1	2	3	2	1	.....	17
.....	1	.....	.....	4	4	3	.....	5	3	6	5	1	.....	18
.....	1	.....	1	2	2	5	1	3	1	8	8	.....	.....	19
2	2	1	.....	1	4	6	5	3	4	11	9	2	.....	20
1	2	1	2	4	6	5	2	3	.....	11	11	.....	.....	21
.....	5	.....	1	11	11	11	5	24	13	27	26	1	.....	22
1	10	2	2	10	13	11	9	4	3	24	20	4	.....	23
7	18	3	3	28	38	17	7	36	13	38	35	1	2	24
6	22	4	6	32	42	26	6	10	3	36	33	3	.....	25
6	20	3	7	57	66	18	10	25	16	23	21	2	.....	26
7	18	3	11	33	45	18	4	14	3	30	27	3	.....	27
6	33	5	9	50	61	18	9	28	22	43	40	1	2	28
2	18	2	15	29	34	36	7	9	4	32	30	2	.....	29
9	39	5	6	42	60	28	13	20	21	36	35	1	.....	30
4	13	4	5	27	35	42	7	11	3	35	34	1	.....	31
13	34	4	10	49	66	47	17	19	20	31	30	1	.....	32
1	13	2	5	27	31	53	12	10	2	28	25	3	.....	33
9	26	3	11	61	74	43	23	25	29	46	43	2	1	34
2	12	.....	3	37	41	56	14	15	7	21	18	3	.....	35
9	29	2	12	57	68	82	29	18	19	28	25	3	.....	36
2	5	1	2	30	33	56	22	15	7	27	26	1	.....	37
1	13	2	11	31	36	93	32	35	32	19	19	.....	.....	38
1	11	1	4	22	25	99	18	14	10	32	31	1	.....	39
5	13	.....	1	24	29	100	31	31	32	25	22	3	.....	40
2	9	1	3	22	26	125	16	29	8	23	21	2	.....	41
1	16	.....	.....	17	18	94	19	31	28	20	19	1	.....	42
3	14	.....	.....	25	31	110	19	34	18	37	36	1	.....	43
1	9	.....	2	7	8	107	21	43	20	25	24	1	.....	44
1	11	.....	.....	6	7	100	13	42	17	28	25	3	.....	45
1	6	.....	.....	3	4	55	15	43	11	8	7	1	.....	46
2	6	.....	1	5	7	71	18	34	16	7	7	.....	.....	47
.....	4	.....	.....	1	1	28	7	13	7	12	11	1	.....	48
2	2	.....	1	2	4	50	5	21	16	7	6	1	.....	49
.....	1	.....	.....	.....	.....	11	1	4	3	3	1	2	.....	50
.....	2	.....	.....	1	1	15	3	3	2	4	4	.....	.....	51
.....	.....	1	.....	.....	1	7	.....	.....	.....	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	.....	3	.....	.....	2	.....	.....	.....	.....	53
.....	.....	.....	.....	.....	.....	2	.....	.....	.....	1	.....	1	.....	54
.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	55
.....	.....	.....	.....	.....	.....	.....	.....	1	13	1	1	.....	.....	56
.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	57

Table 42 — NEW YORK STATE INSTITUTIONS * (exclusive of New York City):

INSTITUTION	All deaths	DEATHS AT		
		Under 1 year	1–4 years	Total under 5 years
Total deaths in State Institutions	**2,984**	**183**	**10**	**193**
Auburn State Prison	5	......	......	......
Binghamton State Hospital	231	......	......	......
Buffalo State Hospital	185	2	......	2
Central Islip State Hospital	457	2	......	2
Clinton Prison, Dannemora	10	......	......	......
Craig Colony, Sonyea	104	2	......	2
Dannemora State Hospital	15	......	......	......
Eastern New York Reformatory, Napanoch	1	......	......	......
Elmira State Reformatory	1	......	......	......
Gowanda State Hospital	68	......	......	......
Great Meadow Prison, Comstock	1	......	......	......
Hudson River State Hospital	305	......	......	......
Kings Park State Hospital	280	5	......	5
Letchworth Village, Thiells	27	......	1	1
Matteawan State Hopital	34	......	......	......
Middletown State Hospital	121	1	......	1
Newark State Custodial Asylum	16	2	......	2
Our Lady of Victory Infant Home, Lackawanna†	194	160	6	166
Raybrook Hospital for Incipient Tuberculosis	5	......	......	......
Rochester State Hospital	147	......	......	......
Rome State Custodial Asylum	62	6	2	8
St. Lawrence State Hospital	160	......	......	......
Sing Sing Prison	17	......	......	......
State Institution for Feeble-minded Children, Syracuse	2	......	......	......
State Reformatory for Women, Bedford	6	3	......	3
State Soldiers' and Sailors' Home, Bath	120	......	......	......
State Training School for Girls, Hudson	2	......	......	......
Utica State Hospital	135	......	......	......
West Haverstraw Hospital for Crippled and Deformed Children	4	......	1	1
Willard State Hospital	235	......	......	......
Woman's Relief Corps Home, Oxford	34	......	......	......

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* On July 1, 1917, section 372 of the Vital Statistics Law was amended making " each state

† Not a State institution but constituted a separate district because of its large nonresident inmate

Deaths, exclusive of stillbirths, by age of decedent: **1921**

AGE OF —

5–9 years	10–14 years	15–19 years	Total 5–19 years	20–29 years	30–39 years	40–49 years	Total 20–49 years	50–59 years	60 years and over	Age unknown
17	21	45	83	206	340	469	1,015	451	1,241	1
.....	.....	.....	.....	2	2	.....	4	.....	1	....
.....	.....	.....	.....	7	19	35	61	47	123	....
.....	.....	2	2	8	23	34	65	32	83	1
.....	.....	2	2	47	83	123	253	69	131	....
.....	.....	1	1	5	2	2	9	.....	.....	....
1	7	17	25	24	17	14	55	15	7	....
.....	.....	.....	.....	4	4	2	10	1	4	....
.....	.....	.....	.....	1	.....	.....	1	.....	.....	....
.....	.....	.....	.....	1	.....	.....	1	.....	.....	....
.....	.....	.....	.....	1	12	6	19	13	36	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	....
.....	.....	.....	.....	13	31	47	91	59	155	....
.....	.....	1	1	28	38	63	129	53	92	....
7	1	6	14	6	2	2	10	2	.....	....
.....	.....	.....	.....	6	4	6	16	11	7	....
.....	.....	.....	.....	1	12	16	29	17	74	....
1	1	1	3	5	3	3	11	.....	.....	....
2	3	1	6	4	5	6	15	5	2	....
.....	.....	1	1	3	.....	1	4	.....	.....	....
.....	.....	2	2	8	22	19	49	32	64	....
5	6	7	18	11	13	5	29	6	1	....
.....	.....	1	1	5	14	18	37	26	96	....
.....	.....	.....	.....	6	4	5	15	2	.....	....
.....	1	.....	1	.....	1	.....	1	.....	.....	....
.....	.....	.....	.....	2	1	.....	3	.....	.....	....
.....	.....	.....	.....	.....	.....	.....	.....	1	119	....
.....	1	1	2	.....	.....	.....	.....	.....	.....	....
.....	.....	1	1	3	5	29	37	25	72	....
1	1	1	3	.....	.....	.....	.....	.....	.....	....
.....	.....	.....	.....	5	23	33	61	35	139	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	34	....

hospital, charitable or penal institution . . . . a primary registration district."
population.

Table 43 — New York State Institutions[1] (exclusive of New York City):

(The numbers in parentheses after the causes of death corres

Line number	INSTITUTIONS	All deaths	DEATH								
			EPIDEMIC, INFECTIOUS AND								
			Typhoid fever 1	Smallpox 6	Measles 7	Scarlet fever 8	Whooping cough 9	Diphtheria 10	Influenza 11	Acute anterior poliomyelitis 22	Cerebrospinal meningitis 24
1	**Total deaths in State Institutions**	2,984	6	......	......	1	7	7	8	......	......
2	Auburn State Prison	5	......	......	......	......	......	......	......	......	......
3	Binghamton State Hospital	231	......	......	......	......	......	......	2	......	......
4	Buffalo State Hospital	185	......	......	......	......	......	2	......	......	......
5	Central Islip State Hospital	457	......	......	......	......	......	......	4	......	......
6	Clinton Prison, Dannemora	10	......	......	......	......	......	......	......	......	......
7	Craig Colony, Sonyea	104	......	......	......	......	......	......	......	......	......
8	Dannemora State Hospital	15	......	......	......	......	......	......	......	......	......
9	Eastern New York Reformatory, Napanoch	1	......	......	......	......	......	......	......	......	......
10	Elmira State Reformatory	1	......	......	......	......	......	......	......	......	......
11	Gowanda State Hospital	68	......	......	......	......	......	......	......	......	......
12	Great Meadow Prison, Comstock	1	......	......	......	......	......	......	......	......	......
13	Hudson River State Hospital	305	......	......	......	......	......	......	......	......	......
14	Kings Park State Hospital	280	......	......	......	......	......	......	......	......	......
15	Letchworth Village, Thiells	27	......	......	......	......	1	......	......	......	......
16	Matteawan State Hospital	34	......	......	......	......	......	......	......	......	......
17	Middletown State Hospital	121	......	......	......	......	......	......	......	......	......
18	Newark State Custodial Asylum	16	......	......	......	......	......	......	......	......	......
19	Our Lady of Victory Infant Home, Lackawanna[2]	194	4	......	......	......	6	4	1	......	......
20	Raybrook Hospital for Incipient Tuberculosis	5	......	......	......	......	......	......	......	......	......
21	Rochester State Hospital	147	......	......	......	......	......	......	1	......	......
22	Rome State Custodial Asylum	62	......	......	......	......	......	......	......	......	......
23	St. Lawrence State Hospital	160	......	......	......	1	......	......	......	......	......
24	Sing Sing Prison	17	......	......	......	......	......	......	......	......	......
25	State Institution for Feeble-Minded Children, Syracuse	2	......	......	......	......	......	......	......	......	......
26	State Reformatory for Women, Bedford	6	......	......	......	......	......	......	......	......	......
27	State Soldiers' and Sailors' Home, Bath	120	......	......	......	......	......	......	......	......	......
28	State Training School for Girls, Hudson	2	......	......	......	......	......	......	......	......	......
29	Utica State Hospital	135	1	......	......	......	......	......	......	......	......
30	West Haverstraw Hospital for Crippled and Deformed Children	4	......	......	......	......	......	1	......	......	......
31	Willard State Hospital	235	1	......	......	......	......	......	......	......	......
32	Women's Relief Corps Home, Oxford	34	......	......	......	......	......	......	......	......	......

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[1] On July 1, 1917, section 372 of the Vital Statistics Law was amended, making " each state hospital, charitable

[2] Not a State institution, but constituted a separate district because of its large nonresident inmate population.

Deaths, (exclusive of stillbirths), by cause of death: **1921 — (Continued)**

pond to those of the 1920 revision of the detailed International List)

FROM —

OTHER GENERAL DISEASES							DISEASES OF THE CIRCULATORY SYSTEM		DISEASES OF THE RESPIRATORY SYSTEM				
Tuberculosis										Pneumonia			
Total all forms 31-37	Pulmonary 31, 37c	Tuberculous meningitis 32	Other forms 33 37a, b	Cancer 43-49	Diabetes 57	Apoplexy and cerebral hemorrhage 74	Organic heart disease 90	Arteriosclerosis 91	Bronchitis 99	Total all forms 100-101	Broncho 100	Lobar and unqualified 101	Line number
451	422	4	25	89	10	114	557	259	17	240	146	94	1
1	1	......	......	2	......	......	......	......	......	......	......	......	2
18	16	......	2	9	2	9	56	30	1	15	10	5	3
23	23	......	......	7	1	12	28	10	......	25	16	9	4
77	75	......	2	1	2	15	49	61	1	26	14	12	5
7	6	......	1	......	......	......	......	......	......	1	......	1	6
20	16	......	4	2	......	1	10	1	......	21	12	9	7
8	8	......	......	......	......	......	1	2	......	......	......	......	8
1	1	......	......	......	......	......	......	......	......	......	......	......	9
1	1	......	......	......	......	......	......	......	......	......	......	......	10
8	7	......	1	8	......	4	18	2	......	4	3	1	11
......	......	......	......	......	......	......	......	......	......	1	1	......	12
61	59	......	2	5	2	9	45	56	......	33	28	5	13
40	38	......	2	16	......	2	35	20	1	30	18	12	14
4	4	......	......	......	......	......	3	......	1	8	3	......	15
9	7	......	2	1	......	......	2	1	......	4	2	2	16
14	14	......	......	4	......	11	22	10	......	7	2	5	17
5	4	1	......	2	......	......	......	......	......	1	1	......	18
1	......	1	......	4	......	......	3	......	7	12	6	6	19
5	5	......	......	......	......	......	......	......	......	......	......	......	20
17	17	......	......	4	8	7	29	22	......	7	5	2	21
30	29	1	......	1	......	3	4	......	4	3	1	2	22
20	19	1	......	5	......	9	53	14	......	13	7	6	23
......	......	......	......	......	......	......	1	......	......	2	......	2	24
1	1	......	......	......	......	......	1	......	......	......	......	......	25
1	1	......	......	......	......	......	......	......	......	......	......	......	26
1	......	......	1	4	......	11	71	6	1	8	1	7	27
1	1	......	......	......	......	......	......	......	......	......	......	......	28
14	14	......	......	2	......	11	48	5	......	4	1	3	29
3	......	......	3	......	......	......	......	......	......	......	......	......	30
59	54	......	5	5	......	7	70	8	......	16	11	5	31
1	1	......	......	3	......	3	8	11	1	4	4	......	32

or penal institution . . . . . a primary registration district."

Table 43 — NEW YORK STATE INSTITUTIONS[1] (exclusive of New York

[The numbers in parentheses after the causes of death correspond

Line number	INSTITUTIONS	DEATHS						
		DISEASES OF THE DIGESTIVE SYSTEM				Nephritis and Bright's disease	THE PUERPERAL STATE	
		Diarrhea and enteritis (under 2 years) 113	Appendicitis 117	Hernia intestinal obstruction 118	Cirrhosis of the liver 122	128, 129	Puerperal septicemia 146	Other puerperal affections 143–45, 147–50
1	Total deaths in State Institutions	46	5	19	9	195	1	4
2	Auburn State Prison	......	......	......	......	......	......	......
3	Binghamton State Hospital	......	......	......	......	28	1	......
4	Buffalo State Hospital	......	......	1	2	15	......	......
5	Central Islip State Hospital	......	......	2	1	23	......	......
6	Clinton Prison, Dannemora	......	......	......	......	......	......	......
7	Craig Colony, Sonyea	......	......	1	......	......	......	......
8	Dannemora State Hospital	......	......	......	......	......	......	......
9	Eastern New York Reformatory Napanoch	......	......	......	......	......	......	......
10	Elmira State Reformatory	......	......	......	......	......	......	......
11	Gowanda State Hospital	......	......	1	......	3	......	......
12	Great Meadow Prison, Comstock	......	......	......	......	......	......	......
13	Hudson River State Hospital	......	......	1	4	11	......	......
14	Kings Park State Hospital	......	1	3	......	24	......	......
15	Letchworth Village, Thiells	......	......	......	......	......	......	......
16	Matteawan State Hospital	......	......	......	......	5	......	......
17	Middletown State Hospital	......	......	1	1	18	......	......
18	Newark State Custodial Asylum	......	......	......	......	......	......	......
19	Our Lady of Victory Infant Home, Lackawanna[2]	42	2	......	......	1	......	4
20	Raybrook Hospital for Incipient Tuberculosis	......	......	......	......	......	......	......
21	Rochester State Hospital	......	1	4	......	6	......	......
22	Rome State Custodial Asylum	4	......	......	......	3	......	......
23	St. Lawrence State Hospital	......	......	......	......	11	......	......
24	Sing Sing Prison	......	......	......	......	1	......	......
25	State Institution for Feeble-Minded Children, Syracuse	......	......	......	......	......	......	......
26	State Reformatory for Women, Bedford	......	......	......	......	......	......	......
27	State Soldiers' and Sailors' Home, Bath	......	......	3	......	6	......	......
28	State Training School for Girls, Hudson	......	......	......	......	......	......	......
29	Utica State Hospital	......	1	......	......	12	......	......
30	West Haverstraw Hospital for Crippled and Deformed Children	......	......	......	......	......	......	......
31	Willard State Hospital	......	......	2	......	28	......	......
32	Women's Relief Corps Home, Oxford	......	......	......	1	......	......	......

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[1] On July 1, 1917, section 372 of the Vital Statistics Law was amended making " each state hospital, charitable or

[2] Not a State institution but constituted a separate district because of its large nonresident inmate population.

City): *Deaths, (exclusive of stillbirths), by cause of death:* 1921 — (Concluded)
to those of the 1920 revision of the detailed International List]

FROM — (*Concluded*)

MALFORMATIONS AND DISEASES OF EARLY INFANCY					EXTERNAL CAUSES								
					Accidents								
Congenital malformations 159	Premature birth 161-A	Congenital debility 160	Other causes peculiar to early infancy 161-B, 162-8	Old age 164	Total 165-96, 201-3	Drowning 182	Railroad 188-A	Automobile 188-C	Other accidents 175-196 201-3	Suicide 165-174	Homicide 197-200	All other causes 200	Line number
14	23	1	12	1	45	......	2	1	42	24	1	818	1
......	......	......	......	....	1	......	......	......	1	......	......	1	2
......	......	......	......	....	1	......	......	......	1	1	......	58	3
......	2	......	......	....	3	......	......	......	3	1	......	53	4
......	......	......	1	....	1	......	......	......	1	4	......	180	5
......	......	......	......	....	......	......	......	......	......	......	1	1	6
......	2	......	......	....	4	......	1	......	3	......	......	42	7
......	......	......	......	....	1	......	......	......	1	1	......	2	8
......	......	......	......	....	......	......	......	......	......	......	......	......	9
......	......	......	......	....	......	......	......	......	......	......	......	......	10
......	......	......	......	....	......	......	......	......	......	......	......	25	11
......	......	......	......	....	......	......	......	......	......	......	......	......	12
......	......	......	......	....	......	......	......	......	......	1	......	77	13
......	2	......	......	....	3	......	1	......	2	3	......	100	14
......	......	......	......	....	......	......	......	......	......	......	......	15	15
......	......	......	......	....	......	......	......	......	......	8	......	9	16
......	1	......	......	....	3	......	......	......	3	3	......	26	17
......	......	......	2	....	......	......	......	......	......	......	......	6	18
14	16	1	6	....	2	......	......	1	1	......	......	64	19
......	......	......	......	....	......	......	......	......	......	......	......	......	20
......	......	......	......	1	1	......	......	......	1	1	......	43	21
......	......	......	......	....	......	......	......	......	......	......	......	10	22
......	......	......	......	....	3	......	......	......	3	......	......	31	23
......	......	......	......	....	11	......	......	......	11	1	......	1	24
......	......	......	......	....	......	......	......	......	......	......	......	......	25
......	......	......	3	....	......	......	......	......	......	1	......	1	26
......	......	......	......	....	4	......	......	......	4	......	......	5	27
......	......	......	......	....	......	......	......	......	......	1	......	......	28
......	......	......	......	....	2	......	......	......	2	1	......	34	29
......	......	......	......	....	......	......	......	......	......	......	......	......	30
......	......	......	......	....	5	......	......	......	5	2	......	32	31
......	......	......	......	....	......	......	......	......	......	......	......	2	32

penal institution . . . . a primary registration district."

MARRIAGES FOR 1920

Omitted from Annual Report for 1920, owing to incompleteness of marriage returns at time of publication

Table 44 — STATE OF NEW YORK: *Marriages by residence*

RESIDENCE OF BRIDE	All marriages	MONTH OF MARRIAGE					
		January	February	March	April	May	June
NEW YORK STATE.......	**112,843**	**8,899**	**7,096**	**6,757**	**9,821**	**7,820**	**16,446**
New York City.........	64,422	5,829	4,224	4,641	5,532	4,515	**9,368**
Urban*................	26,507	1,689	1,658	1,080	2,525	1,825	**4,163**
Rural*.................	18,445	1,179	1,019	832	1,522	1,222	**2,511**
Nonresidents of State...	3,469	202	195	204	242	258	**404**
Albany County, Total.......	**2,041**	**123**	**106**	**76**	**214**	**145**	**333**
Albany..............	1,219	68	67	56	125	74	**220**
Cohoes..............	235	9	8	4	26	23	**35**
Watervliet............	185	20	12	7	16	17	**24**
Rest of county..........	234	12	6	6	24	16	**38**
Nonresidents of State...	168	14	12	3	23	15	**16**
Allegany County, Total.....	**396**	**30**	**15**	**25**	**34**	**16**	**49**
Residents of county....	375	29	15	25	32	14	**48**
Nonresidents of State...	21	1	......	......	2	2	**1**
Broome County, Total......	**1,411**	**108**	**83**	**73**	**115**	**105**	**214**
Binghamton...........	720	58	39	46	60	46	**132**
Rest of county..........	465	36	31	16	39	48	**52**
Nonresidents of State...	226	14	13	11	16	11	**30**
Cattaraugus County, Total..	**881**	**56**	**66**	**41**	**75**	**54**	**109**
Olean...............	212	21	13	6	18	14	**30**
Salamanca...........	112	7	4	7	9	7	**13**
Rest of county.........	334	16	26	14	31	19	**34**
Nonresidents of State...	223	12	23	14	17	14	**32**
Cayuga County, Total......	**628**	**33**	**35**	**26**	**61**	**44**	**101**
Auburn..............	427	20	26	15	45	30	**74**
Rest of county..........	180	13	9	11	16	13	**23**
Nonresidents of State...	21	......	......	......	......	1	**4**
Chautauqua County, Total...	1,784	**116**	**104**	**102**	**132**	**136**	**234**
Dunkirk.............	173	14	12	3	14	13	**28**
Jamestown............	468	31	28	22	46	49	**68**
Rest of county..........	476	33	20	26	26	28	**70**
Nonresidents of State...	667	38	44	51	46	46	**68**
Chemung County, Total.....	**795**	**47**	**54**	**43**	**72**	**61**	**100**
Elmira..............	438	21	35	17	36	32	**64**
Rest of county..........	175	9	9	9	15	15	**24**
Nonresidents of State...	182	17	10	17	21	14	**12**
Chenango County, Total....	**312**	**23**	**26**	**11**	**21**	**19**	**37**
Norwich.............	100	5	9	3	7	7	**12**
Rest of county.........	212	18	17	8	14	12	**25**
Nonresidents of State...	......	......	......	......	......	......	....
Clinton County, Total......	**395**	**30**	**25**	**12**	**31**	**31**	**55**
Plattsburg............	149	14	12	8	11	16	**17**
Rest of county..........	230	16	13	4	20	14	**33**
Nonresidents of State...	16	......	......	......	......	1	**5**
Columbia County, Total.....	**390**	**23**	**25**	**21**	**38**	**30**	**46**
Hudson..............	95	7	9	4	11	8	**14**
Rest of county..........	206	14	11	14	19	11	**24**
Nonresidents of State...	89	2	5	3	8	11	**8**
Cortland County, Total.....	**321**	**24**	**16**	**15**	**19**	**19**	**58**
Cortland.............	162	10	5	10	11	12	**31**
Rest of county..........	153	13	10	5	8	6	**27**
Nonresidents of State...	6	1	1	......	......	1	....
Delaware County, Total.....	**390**	**22**	**19**	**26**	**24**	**31**	**48**
Residents of county....	373	20	18	24	23	28	**48**
Nonresidents of State...	17	2	1	2	1	3	....
Dutchess County, Total.....	**832**	**50**	**45**	**43**	**81**	**74**	**106**
Beacon..............	87	8	6	2	9	7	**18**
Poughkeepsie..........	356	25	25	18	39	31	**53**
Rest of county..........	355	16	14	18	32	35	**31**
Nonresidents of State...	34	1	......	5	1	1	**4**

*** Urban includes all cities and villages listed;**

of the bride according to the month of marriage: 1920

RESIDENCE OF BRIDE	MONTH OF MARRIAGE — (*Continued*)					
	July	August	September	October	November	December
NEW YORK STATE	**9,984**	**8,092**	**9,862**	**9,870**	**10,215**	**7,981**
New York City	6,338	4,095	4,441	4,942	5,568	4,929
Urban*	1,930	2,117	3,071	2,535	2,472	1,442
Rural*	1,362	1,512	1,955	2,084	1,872	1,375
Nonresidents of State	354	368	395	309	303	235
Albany County, Total	**135**	**151**	**221**	**224**	**197**	**117**
Albany	78	87	134	126	108	76
Cohoes	19	21	21	27	31	11
Watervliet	12	11	20	22	20	4
Rest of county	15	16	29	34	25	13
Nonresidents of State	11	16	17	15	13	13
Allegany County, Total	**31**	**34**	**38**	**56**	**34**	**34**
Residents of county	27	31	38	53	31	32
Nonresidents of State	4	3	....	3	3	2
Broome County, Total	**89**	**115**	**167**	**145**	**118**	**79**
Binghamton	33	60	80	67	58	41
Rest of county	37	39	57	45	39	26
Nonresidents of State	19	16	30	33	21	12
Cattaraugus County, Total	**73**	**65**	**82**	**75**	**105**	**80**
Olean	18	11	21	21	23	16
Salamanca	10	12	14	4	16	9
Rest of county	34	21	29	31	46	33
Nonresidents of State	11	21	18	19	20	22
Cayuga County, Total	**55**	**56**	**64**	**65**	**52**	**36**
Auburn	36	34	47	45	38	17
Rest of county	16	17	17	18	11	16
Nonresidents of State	3	5	....	2	3	3
Chautauqua County, Total	**167**	**147**	**194**	**159**	**179**	**114**
Dunkirk	13	11	17	18	19	11
Jamestown	42	36	41	44	39	22
Rest of county	44	37	65	34	56	37
Nonresidents of State	68	63	71	63	65	44
Chemung County, Total	**61**	**62**	**106**	**63**	**74**	**52**
Elmira	37	33	70	37	32	24
Rest of county	13	16	18	12	21	14
Nonresidents of State	11	13	18	14	21	14
Chenango County, Total	**18**	**33**	**38**	**39**	**27**	**20**
Norwich	7	12	16	10	11	1
Rest of county	11	21	22	29	16	19
Nonresidents of State	....	....	....	....	....	....
Clinton County, Total	**33**	**38**	**45**	**38**	**30**	**27**
Plattsburg	8	13	16	16	8	10
Rest of county	23	23	27	22	21	14
Nonresidents of State	2	2	2	....	1	3
Columbia County, Total	**36**	**29**	**37**	**48**	**35**	**22**
Hudson	5	6	10	8	7	6
Rest of county	19	16	17	28	19	14
Nonresidents of State	12	7	10	12	9	2
Cortland County, Total	**27**	**28**	**42**	**36**	**18**	**19**
Cortland	13	14	28	12	10	6
Rest of county	12	14	14	23	8	13
Nonresidents of State	2	....	....	1	....	....
Delaware County, Total	**25**	**35**	**53**	**42**	**34**	**31**
Residents of county	24	35	51	42	33	27
Nonresidents of State	1	....	2	....	1	4
Dutchess County, Total	**66**	**77**	**93**	**82**	**68**	**47**
Beacon	11	6	....	1	1	18
Poughkeepsie	28	27	40	35	21	14
Rest of county	26	87	49	43	40	14
Nonresidents of State	1	7	4	3	6	1

rural includes all other districts.

Table 44 — STATE OF NEW YORK: *Marriages by residence*

RESIDENCE OF BRIDE	All marriages	MONTH OF MARRIAGE					
		January	February	March	April	May	June
Erie County, Total	7,457	467	475	258	626	501	1,222
Buffalo	5,793	370	390	197	499	388	965
Lackawanna	130	10	4	1	14	6	20
Tonawanda	92	8	7	7	10	3	13
Rest of county	846	49	44	28	70	60	159
Nonresidents of State	596	30	30	25	33	44	65
Essex County, Total	249	18	15	9	17	26	26
Residents of county	243	18	14	9	17	24	26
Nonresidents of State	6	......	1	......	......	2	......
Franklin County, Total	451	23	29	13	46	31	56
Residents of county	438	23	29	13	46	28	54
Nonresidents of State	13	......	......	......	......	3	2
Fulton County, Total	439	36	24	22	34	38	54
Gloversville	234	23	13	16	18	24	28
Johnstown	113	9	7	3	11	7	13
Rest of county	88	4	3	3	5	7	13
Nonresidents of State	4	......	1	......	......	......	......
Genesee County, Total	344	15	19	22	37	15	44
Batavia	132	6	6	4	15	7	17
Rest of county	206	9	11	18	22	8	27
Nonresidents of State	6	......	2	......	......	......	......
Greene County, Total	205	7	8	8	10	7	33
Residents of county	202	7	8	8	10	7	32
Nonresidents of State	3	......	......	......	......	......	1
Hamilton County, Total	34	1	......	1	1	3	4
Residents of county	34	1	......	1	1	3	4
Nonresidents of State	......	......	......	......	......	......	......
Herkimer County, Total	576	37	32	28	55	47	60
Little Falls	128	7	6	5	11	13	20
Rest of county	440	30	26	22	43	33	39
Nonresidents of State	8	......	......	1	1	1	1
Jefferson County, Total	824	66	55	31	55	46	89
Watertown	359	35	28	11	28	26	39
Rest of county	455	30	26	20	25	20	48
Nonresidents of State	10	1	1	......	2	......	2
Lewis County, Total	247	14	14	15	22	16	39
Residents of county	246	14	14	15	22	16	39
Nonresidents of State	1	......	......	......	......	......	......
Livingston County, Total	197	22	15	13	16	15	30
Residents of county	196	22	15	13	15	15	30
Nonresidents of State	1	......	......	......	1	......	......
Madison County, Total	359	21	21	20	25	23	50
Oneida	126	7	8	9	7	10	15
Rest of county	232	14	13	11	18	13	34
Nonresidents of State	1	......	......	......	......	......	1
Monroe County, Total	3,735	220	224	162	371	257	543
Rochester	3,311	192	194	143	330	226	466
Rest of county	366	22	28	15	39	26	68
Nonresidents of State	58	6	2	4	2	5	9
Montgomery County, Total	586	38	25	13	50	40	110
Amsterdam	365	26	15	6	35	28	68
Rest of county	215	12	10	6	14	12	41
Nonresidents of State	6	......	......	1	1	......	1
Nassau County, Total	1,040	71	64	49	100	66	153
Glen Cove	37	4	2	2	4	7	9
Rest of county	986	67	62	46	95	58	142
Nonresidents of State	17	......	......	1	1	1	2

of the bride according to the month of marriage: 1920 — (Continued)

RESIDENCE OF BRIDE	MONTH OF MARRIAGE — (*Continued*)					
	July	August	September	October	November	December
Erie County, Total	569	624	980	647	769	319
Buffalo	419	462	784	492	600	227
Lackawanna	6	14	13	17	20	5
Tonawanda	5	8	15	8	6	2
Rest of county	59	54	95	85	94	49
Nonresidents of State	80	86	73	45	49	36
Essex County, Total	24	18	28	26	26	16
Residents of county	24	17	27	26	25	16
Nonresidents of State	....	1	1	....	1	....
Franklin County, Total	29	46	55	57	43	23
Residents of county	28	46	49	56	43	23
Nonresidents of State	1	....	6	1	....	....
Fulton County, Total	41	28	48	37	40	37
Gloversville	25	14	16	12	22	23
Johnstown	7	9	15	15	10	7
Rest of county	9	4	16	9	8	7
Nonresidents of State	....	1	1	1	....	....
Genesee County, Total	24	27	45	30	51	15
Batavia	10	11	21	14	19	2
Rest of county	13	16	24	16	31	11
Nonresidents of State	1	....	....	....	1	2
Greene County, Total	21	22	19	22	27	21
Residents of county	21	21	19	22	26	21
Nonresidents of State	....	1	....	....	1	....
Hamilton County, Total	2	2	4	7	5	4
Residents of county	2	2	4	7	5	4
Nonresidents of State	....	....	....	....	....	....
Herkimer County, Total	48	55	63	54	68	29
Little Falls	7	9	15	12	18	5
Rest of county	39	46	48	41	49	24
Nonresidents of State	2	....	....	1	1	....
Jefferson County, Total	74	78	92	100	72	66
Watertown	32	32	39	36	23	30
Rest of county	41	45	53	62	49	36
Nonresidents of State	1	1	....	2	....	....
Lewis County, Total	26	25	20	26	16	14
Residents of county	26	25	20	26	15	14
Nonresidents of State	....	....	....	....	1	....
Livingston County, Total	9	13	21	12	17	14
Residents of county	9	13	21	12	17	14
Nonresidents of State	....	....	....	....	....	....
Madison County, Total	28	25	38	41	35	32
Oneida	9	9	14	15	10	13
Rest of county	19	16	24	26	25	19
Nonresidents of State	....	....	....	....	....	....
Monroe County, Total	272	328	422	354	341	241
Rochester	243	296	387	316	308	210
Rest of county	24	25	30	34	27	28
Nonresidents of State	5	7	5	4	6	3
Montgomery County, Total	38	49	64	69	59	31
Amsterdam	24	31	44	39	39	10
Rest of county	13	18	19	29	20	21
Nonresidents of State	1	....	1	1	....	....
Nassau County, Total	86	86	102	111	88	64
Glen Cove	2	1	5	1	....	....
Rest of County	82	81	95	108	88	62
Nonresidents of State	2	4	2	2	....	2

Table 44 — STATE OF NEW YORK: *Marriages by residenc*

RESIDENCE OF BRIDE	All marriages	MONTH OF MARRIAGE					
		January	February	March	April	May	June
Niagara County, Total	1,379	85	81	62	132	93	208
Lockport	234	14	9	17	24	8	43
Niagara Falls	546	34	34	23	58	42	78
North Tonawanda	155	9	9	4	15	14	26
Rest of county	269	18	19	9	21	17	45
Nonresidents of State	175	10	10	9	14	12	16
Oneida County, Total	1,869	169	120	53	169	133	311
Rome	259	24	24	9	18	15	33
Utica	1,060	61	63	30	105	81	192
Sherrill	14	......	1	2	1	1	5
Rest of county	506	22	30	10	39	34	76
Nonresidents of State	30	2	2	2	6	2	5
Onondaga County, Total	2,492	161	150	115	233	159	364
Syracuse	1,832	119	116	88	177	115	271
Rest of county	606	41	30	23	52	39	87
Nonresidents of State	54	1	4	4	4	5	6
Ontario County, Total	464	20	30	28	52	18	58
Canandaigua	72	1	1	4	7	7	12
Geneva	159	5	16	5	22	4	14
Rest of county	222	12	12	17	23	7	30
Nonresidents of State	11	2	1	2	......	......	2
Orange County, Total	1,122	71	74	56	111	81	149
Middletown	202	15	11	11	24	11	28
Newburg	275	18	26	13	34	17	30
Port Jervis	132	4	7	7	16	8	26
Rest of county	460	31	27	24	36	38	57
Nonresidents of State	53	3	3	1	1	7	8
Orleans County, Total	225	14	18	11	27	10	27
Residents of county	222	14	18	11	27	9	27
Nonresidents of State	3	......	......	......	......	1	......
Oswego County, Total	634	39	38	22	55	45	95
Fulton	150	8	16	4	11	9	20
Oswego	211	11	15	9	20	13	32
Rest of county	262	20	7	9	24	21	41
Nonresidents of State	11	......	......	......	......	2	2
Otsego County, Total	403	15	24	23	29	20	72
Oneonta	123	5	7	10	10	8	18
Rest of county	274	9	17	13	18	12	53
Nonresidents of State	6	1	......	......	1	......	1
Putnam County, Total	105	3	4	3	11	8	17
Residents of county	83	3	4	3	10	6	15
Nonresidents of State	22	......	......	......	1	2	2
Rensselaer County, Total	1,197	59	69	46	117	72	184
Rensselaer	110	4	7	4	9	5	21
Troy	771	40	49	28	81	45	124
Rest of county	245	13	12	8	20	18	30
Nonresidents of State	71	2	1	6	7	4	9
Rockland County, Total	390	31	15	14	35	31	40
Residents of county	358	28	15	13	35	27	33
Nonresidents of State	32	3	......	1	......	4	7
St. Lawrence County, Total	770	43	50	31	50	58	113
Ogdensburg	127	7	7	6	11	11	20
Rest of county	621	35	42	23	38	45	91
Non residents of State	22	1	1	2	1	2	2
Saratoga County, Total	551	25	39	19	57	28	81
Saratoga Springs	123	......	5	4	17	9	15
Mechanicville	81	9	6	1	10	......	16
Rest of county	335	16	28	13	30	19	48
Nonresidents of State	12	......	......	1	......	......	2

of the bride according to the month of marriage: 1920 — (Continued)

RESIDENCE OF BRIDE	MONTH OF MARRIAGE — (*Continued*)					
	July	August	September	October	November	December
Niagara County, Total	**112**	**119**	**153**	**112**	**130**	**192**
Lockport	13	15	33	20	23	15
Niagara Falls	47	48	60	45	49	28
North Tonawanda	12	14	15	14	14	9
Rest of county	12	21	23	20	33	31
Nonresidents of State	28	21	22	13	11	9
Oneida County, Total	**126**	**143**	**186**	**220**	**190**	**109**
Rome	17	19	29	27	29	15
Utica	69	71	105	126	103	54
Sherrill	1	....	....	....	....	3
Rest of county	36	50	51	64	58	36
Nonresidents of State	3	3	1	3	....	1
Onondaga County, Total	**180**	**202**	**255**	**264**	**256**	**153**
Syracuse	137	156	185	192	185	91
Rest of county	37	39	66	69	66	57
Nonresidents of State	6	7	4	3	5	5
Ontario County, Total	**27**	**33**	**61**	**43**	**60**	**34**
Canandaigua	7	1	10	7	7	8
Geneva	9	13	23	15	21	12
Rest of county	10	17	27	21	32	14
Nonresidents of State	1	2	1	....	....	....
Orange County, Total	**78**	**90**	**118**	**114**	**101**	**79**
Middletown	7	17	25	26	17	10
Newburg	24	16	30	23	27	17
Port Jervis	9	14	8	14	11	8
Rest of county	31	36	49	48	43	40
Nonresidents of State	7	7	6	3	3	4
Orleans County, Total	**17**	**20**	**18**	**23**	**21**	**19**
Residents of county	16	19	18	23	21	19
Nonresidents of State	1	1	....	....	....	....
Oswego County, Total	**42**	**46**	**67**	**79**	**61**	**45**
Fulton	7	18	15	19	13	10
Oswego	15	11	23	20	25	17
Rest of county	20	15	25	40	22	18
Nonresidents of State	....	2	4	....	1	....
Otsego County, Total	**32**	**32**	**37**	**42**	**37**	**40**
Oneonta	14	7	13	11	12	8
Rest of county	18	25	22	30	25	32
Nonresidents of State	....	....	2	1	....	....
Putnam County, Total	**10**	**10**	**5**	**11**	**10**	**13**
Residents of county	7	7	4	10	7	7
Nonresidents of State	3	3	1	1	3	6
Rensselaer County, Total	75	118	125	120	117	95
Rensselaer	11	10	12	14	12	1
Troy	51	78	71	68	74	62
Rest of county	8	15	34	32	25	30
Nonresidents of State	5	15	8	6	6	2
Rockland County, Total	**25**	**31**	**55**	**43**	**45**	**25**
Residents of county	25	28	50	40	42	22
Nonresidents of State	....	3	5	3	3	3
St. Lawrence County, Total	**58**	**82**	**88**	**76**	**71**	**50**
Ogdensburg	10	13	18	10	8	6
Rest of county	45	67	67	64	60	44
Nonresidents of State	3	2	3	2	3	....
Saratoga County, Total	**39**	41	**58**	**62**	**64**	**38**
Saratoga Springs	7	7	21	18	13	7
Mechanicville	9	4	6	8	8	4
Rest of county	22	26	30	36	41	26
Nonresidents of State	1	4	1	....	2	1

Table 44 — STATE OF NEW YORK: *Marriages by residence of*

RESIDENCE OF BRIDE	All marriages	MONTH OF MARRIAGE					
		January	February	March	April	May	June
Schenectady County, Total	948	51	50	25	79	70	167
Schenectady	772	40	42	22	69	61	133
Rest of county	156	9	8	3	10	8	33
Nonresidents of State	20	2	......	......	......	1	1
Schoharie County, Total	186	11	13	9	8	15	22
Residents of county	185	11	13	9	8	15	22
Nonresidents of State	1	......	......	......	......	......	......
Schuyler County, Total	135	13	7	6	10	13	9
Residents of county	127	12	7	6	9	11	8
Nonresidents of State	8	1	......	......	1	2	1
Seneca County, Total	143	8	5	10	13	8	18
Residents of county	143	8	5	10	13	8	18
Nonresidents of State	......	......	......	......	......	......	......
Steuben County, Total	974	64	48	50	74	72	134
Corning	196	8	5	9	21	10	35
Hornell	212	15	11	9	15	15	34
Rest of county	487	35	31	26	34	36	58
Nonresidents of State	79	6	1	6	4	11	7
Suffolk County, Total	848	52	44	36	72	59	107
Residents of county	838	52	44	34	72	58	105
Nonresidents of State	10	......	......	2	......	1	2
Sullivan County, Total	246	9	8	9	28	16	40
Residents of county	237	9	8	8	27	16	36
Nonresidents of State	9	......	......	1	1	......	4
Tioga County, Total	297	14	19	18	17	21	37
Residents of county	211	10	13	12	14	14	22
Nonresidents of State	86	4	6	6	3	7	15
Tompkins County, Total	328	26	13	21	31	23	37
Ithaca	193	15	11	13	17	15	21
Rest of county	131	11	2	8	14	8	16
Nonresidents of State	4	......	......	......	......	......	......
Ulster County, Total	728	54	35	29	70	48	101
Kingston	299	24	11	15	38	16	50
Rest of county	419	30	24	13	31	31	49
Nonresidents of State	10	......	......	1	1	1	2
Warren County, Total	310	16	21	12	20	8	49
Glens Falls	189	11	16	6	11	1	33
Rest of county	120	5	5	6	9	7	16
Nonresidents of State	1	......	......	......	......	......	......
Washington County, Total	388	30	17	21	37	33	48
Residents of county	364	30	16	20	37	33	46
Nonresidents of State	24	......	1	1	......	......	2
Wayne County, Total	412	46	23	40	33	17	64
Residents of county	405	46	22	38	33	17	64
Nonresidents of State	7	......	1	2	......	......	......
Westchester County, Total	3,230	240	198	154	319	232	486
Peekskill	83	9	10	1	9	10	21
White Plains	168	15	3	8	23	16	28
Mt. Vernon	307	40	26	16	43	26	44
New Rochelle	333	28	19	17	30	22	47
Ossining village	......	......	......	......	......	......	......
Portchester village	172	9	10	9	13	12	20
Yonkers	989	52	75	44	101	67	167
Rest of county	876	62	37	40	79	61	116
Nonresidents of State	302	25	18	19	21	18	43
Wyoming County, Total	204	12	11	10	13	9	28
Residents of county	204	12	11	10	13	9	28
Nonresidents of State	......	......	......	......	......	......	......
Yates County, Total	124	8	10	5	5	9	9
Residents of county	118	8	10	5	5	9	8
Nonresidents of State	6	......	......	......	......	......	1

the bride according to the month of marriage: **1920** — (Concluded)

RESIDENCE OF BRIDE	MONTH OF MARRIAGE — (*Concluded*)					
	July	August	September	October	November	December
Schenectady County, Total	**75**	**66**	**121**	**111**	**74**	**59**
Schenectady	59	44	103	89	61	49
Rest of county	14	18	15	21	12	5
Nonresidents of State	2	4	3	1	1	5
Schoharie County, Total	**13**	**10**	**12**	**28**	**24**	**21**
Residents of county	13	10	11	28	24	21
Nonresidents of State	....	....	1	....	....	....
Schuyler County, Total	**14**	**9**	**11**	**20**	**8**	**15**
Residents of county	12	9	11	19	8	15
Nonresidents of State	2	....	....	1	....	....
Seneca County, Total	**14**	**13**	**17**	**16**	**10**	**11**
Residents of county	14	13	17	16	10	11
Nonresidents of State	....	....	....	....	....	....
Steuben County, Total	**73**	**86**	**90**	**109**	**96**	**78**
Corning	12	12	20	26	15	23
Hornell	16	23	20	20	17	17
Rest of county	39	48	40	57	54	29
Nonresidents of State	6	3	10	6	10	9
Suffolk County, Total	**61**	**66**	**89**	**116**	**99**	**47**
Residents of county	61	65	87	114	99	47
Nonresidents of State	....	1	2	2	....	....
Sullivan County, Total	**16**	**15**	**27**	**31**	**29**	**18**
Residents of county	16	14	27	31	27	18
Nonresidents of State	....	1	....	....	2	....
Tioga County, Total	**19**	**31**	**24**	**40**	**31**	**26**
Residents of county	12	22	14	31	26	21
Nonresidents of State	7	9	10	9	5	5
Tompkins County, Total	**25**	**36**	**33**	**20**	**31**	**32**
Ithaca	13	22	19	11	18	18
Rest of county	11	14	14	9	11	13
Nonresidents of State	1	....	....	....	2	1
Ulster County, Total	**52**	**45**	**65**	**90**	**72**	**67**
Kingston	17	18	20	46	24	20
Rest of county	31	27	45	44	48	46
Nonresidents of State	4	....	....	....	....	1
Warren County, Total	**23**	**21**	**44**	**51**	**26**	**19**
Glens Falls	14	14	22	33	17	11
Rest of county	8	7	22	18	9	8
Nonresidents of State	1	....	....	....	....	....
Washington County, Total	**24**	**40**	**40**	**32**	**36**	**30**
Residents of county	21	37	32	29	34	29
Nonresidents of State	3	3	8	3	2	1
Wayne County, Total	**29**	**28**	**35**	**36**	**31**	**30**
Residents of county	28	28	35	36	30	28
Nonresidents of State	1	....	....	....	1	2
Westchester County, Total	**259**	**236**	**374**	**311**	**258**	**163**
Peekskill	12	7	2	....	....	2
White Plains	8	20	13	9	16	9
Mt. Vernon	28	22	53	9	....	....
New Rochelle	30	21	30	34	30	25
Ossining village	....	....	....	....	....	....
Portchester village	11	14	17	28	18	11
Yonkers	75	78	107	83	88	52
Rest of county	66	52	110	119	86	48
Nonresidents of State	29	22	42	29	20	16
Wyoming County, Total	**11**	**21**	**20**	**32**	**18**	**19**
Residents of county	11	21	20	32	18	19
Nonresidents of State	....	....	....	....	....	....
Yates County, Total	**10**	**11**	**12**	**11**	**13**	**21**
Residents of county	8	10	12	10	13	20
Nonresidents of State	2	1	....	1	....	1

Table 45 — STATE OF NEW YORK (exclusive of New York City):

AGE OF GROOM	All marriages	Brides at Age of								
		12 years	13 years	14 years	15 years	16 years	17 years	18 years	19 years	20 years
New York State (exc. of N.Y. City)	48,421	....	4	21	157	687	1,484	4,849	4,433	3,965
15 years	......	....	....	....	....	....	....	....	....	.....
16 years	13	....	....	....	1	3	2	3	2	1
17 years	61	....	....	1	4	11	14	14	5	1
18 years	331	....	....	1	8	29	47	122	51	23
19 years	742	....	....	....	16	51	99	206	144	98
20 years	1,015	....	....	....	5	47	109	209	213	159
21 years	5,171	....	3	3	23	120	292	1,347	1,061	741
22 years	4,185	....	....	4	19	81	170	674	665	606
23 years	4,127	....	1	2	20	84	168	531	522	507
24 years	4,128	....	....	3	15	63	144	458	457	415
25 years	3,680	....	....	....	8	51	144	328	329	350
26 years	3,319	....	....	8	16	46	91	279	249	263
27 years	2,758	....	....	2	10	29	64	167	192	187
28 years	2,504	....	....	1	2	17	45	154	188	165
29 years	1,911	....	....	....	5	11	19	89	103	129
30 years	1,692	....	....	....	....	13	17	65	72	74
31 years	1,237	....	....	....	1	7	9	43	67	42
32 years	1,304	....	....	1	....	5	16	47	41	49
33 years	980	....	....	....	....	7	4	25	26	37
34 years	923	....	....	....	2	1	7	21	23	19
35 years	803	....	....	....	....	3	7	16	20	24
36 years	654	....	....	....	1	....	2	15	13	12
37 years	566	....	....	....	....	....	3	4	11	11
38 years	625	....	....	....	....	3	2	6	5	9
39 years	471	....	....	....	....	....	....	4	4	3
40 years	445	....	....	....	1	1	2	4	4	7
41 years	346	....	....	....	....	1	1	2	1	5
42 years	353	....	....	....	....	1	1	4	2	5
43 years	313	....	....	....	....	....	2	3	4	1
44 years	265	....	....	....	....	....	1	1	1	2
45 years	319	....	....	....	....	1	....	3	2	1
46 years	219	....	....	....	....	....	....	....	....	1
47 years	243	....	....	....	....	....	....	2	1	3
48 years	229	....	....	....	....	....	....	....	1	2
49 years	187	....	....	....	....	....	....	1	....	1
50 years	242	....	....	....	....	....	....	1	....	1
51 years	152	....	....	....	....	....	....	....	1	.....
52 years	184	....	....	....	....	....	....	....	1	.....
53 years	143	....	....	....	....	....	....	....	1	.....
54 years	161	....	....	....	....	....	....	....	....	.....
55 years	131	....	....	....	....	....	....	....	....	1
56 years	125	....	....	....	....	....	....	1	1	.....
57 years	118	....	....	....	....	....	....	....	....	.....
58 years	138	....	....	....	....	....	....	....	....	.....
59 years	86	....	....	....	....	....	1	....	....	.....
60 years	141	....	....	....	....	1	....	....	....	1
61 years	66	....	....	....	....	....	....	....	....	.....
62 years	79	....	....	....	....	....	1	....	....	.....
63 years	68	....	....	....	....	....	....	....	....	.....
64 years	58	....	....	....	....	....	....	....	....	.....
65 years	70	....	....	....	....	....	....	....	....	.....
66 years	50	....	....	....	....	....	....	....	....	.....
67 years	40	....	....	....	....	....	....	....	....	.....
68 years	42	....	....	....	....	....	....	....	....	.....
69 years	26	....	....	....	....	....	....	....	....	.....
70 years	36	....	....	....	....	....	....	....	....	.....
71 years	12	....	....	....	....	....	....	....	....	.....
72 years	24	....	....	....	....	....	....	....	....	.....
73 years	27	....	....	....	....	....	....	....	....	.....
74 years	17	....	....	....	....	....	....	....	....	.....
75 years	11	....	....	....	....	....	....	....	....	.....
76 years	13	....	....	....	....	....	....	....	....	.....
77 years	5	....	....	....	....	....	....	....	....	.....
78 years	3	....	....	....	....	....	....	....	....	.....
79 years	7	....	....	....	....	....	....	....	....	.....
80 years and over	15	....	....	....	....	....	....	....	....	.....
Age not stated	3	....	....	....	....	....	....	....	....	.....

Marriages by age of groom according to age of bride: **1920**

BRIDE AT AGE OF —												
21 years	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years	30 years	31 years	32 years	33 years
4,312	3,732	3,411	3,021	2,540	2,117	1,798	1,513	1,212	1,106	708	737	560
....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	1	....	....	....	....	....	....	....	....	....	....
7	....	2	1	....	....	....	....	....	....	....	....	1
26	9	2	8	1	1	....	2	1	....	....	....	....
46	36	18	8	6	5	5	3	....	1	....	....	....
111	68	36	20	13	8	5	4	3	1	2	1	....
729	338	201	127	83	40	21	18	10	3	3	2	....
670	503	306	192	123	60	46	20	13	13	3	3	1
560	484	486	278	174	111	70	51	23	19	9	12	5
531	467	451	432	247	160	98	73	41	30	9	10	3
384	416	391	347	362	196	145	77	45	37	25	11	10
293	343	330	360	275	269	169	113	61	67	14	25	14
224	255	270	268	231	221	219	134	96	56	36	30	13
190	215	218	208	218	230	181	182	105	82	39	31	20
140	134	146	141	149	188	148	129	144	86	53	37	35
99	94	127	166	133	108	143	117	78	116	54	56	30
64	66	80	95	85	98	91	91	81	74	65	62	30
52	79	66	81	103	106	97	87	87	73	49	67	45
44	42	64	59	45	66	72	69	62	69	45	55	47
35	41	47	61	58	63	58	59	49	46	39	49	50
18	40	37	40	64	33	46	53	42	50	37	33	22
12	20	23	29	35	52	30	35	46	37	25	29	32
9	13	22	20	28	35	32	27	39	43	30	21	25
24	20	19	16	33	22	21	36	35	34	25	26	27
9	9	14	13	8	13	17	31	29	22	20	19	20
5	5	11	10	15	19	16	19	25	18	13	23	21
5	4	5	3	10	9	11	17	16	22	15	17	15
4	11	8	4	5	7	15	9	10	18	16	23	9
2	3	6	6	9	8	6	12	15	23	10	14	22
3	3	3	3	4	7	6	4	10	8	10	11	12
3	4	5	8	2	4	9	8	6	8	12	10	6
2	1	4	8	....	6	3	2	5	6	9	8	8
....	2	1	2	3	5	3	4	6	6	7	8	2
1	....	2	4	3	2	1	4	5	2	4	7	9
1	1	1	1	5	3	5	8	4	8	3	6	2
1	2	2	1	3	5	1	5	2	10	7	4	3
2	1	....	1	3	1	....	3	4	1	3	4	2
....	....	1	1	....	1	3	5	4	4	4	3	1
....	....	....	1	1	1	1	2	2	1	1	5	3
....	....	....	....	....	....	2	1	1	2	4	5	2
1	....	....	....	1	....	....	1	2	4	2	1	3
1	1	....	....	1	1	1	....	1	1	....	....	2
....	....	1	1	....	....	1	....	1	....	2	2	3
....	....	....	1	....	1	....	....	1	2	2	3	2
....	....	....	....	....	....	....	1	....	....	....	1	....
....	1	1	....	1	....	....	....	1	....	....	....	2
....	....	....	....	....	....	....	....	....	1	1	....	....
....	1	1	....	....	....	....	....	....	....	1	....	1
....	....	....	....	....	....	....	1	1	....	....	....	....
2	....	....	....	....	1	....	1	....	....	....	1	....
....	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	....	....	....	....	....	....	1	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	1	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	1	....	....	....	....	....	....	....
1	....	....	....	....	....	....	....	....	1	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....
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....	....	....	....	....	....	....	....	....	....	....	....	....
1	....	....	....	....	....	....	....	....	....	....	....	....

Table 45 — STATE OF NEW YORK (exclusive of New York City):

AGE OF GROOM	BRIDES AT AGE OF — (*Continued*)										
	34 years	35 years	36 years	37 years	38 years	39 years	40 years	41 years	42 years	43 years	44 years
New York State (exc. of N. Y. City)	564	554	449	347	430	356	368	202	268	188	204
15 years	....	....	....	....	....	....	....	....	....	....	....
16 years	....	....	....	....	....	....	....	....	....	....	....
17 years	....	....	....	....	....	....	....	....	....	....	....
18 years	....	....	....	....	....	....	....	....	....	....	....
19 years	....	....	....	....	....	....	....	....	....	....	....
20 years	1	....	....	....	....	....	....	....	....	....	....
21 years	1	....	....	1	2	....	....	....	....	....	1
22 years	6	1	2	....	2	....	....	....	....	....	....
23 years	1	....	1	2	....	1	1	1	....	....	....
24 years	8	2	4	....	1	1	2	1	1	....	....
25 years	4	5	3	2	4	1	1	1	1	1	....
26 years	11	10	8	5	1	....	....	....	1	2	....
27 years	14	10	7	4	6	3	3	2	3	....	....
28 years	14	11	11	5	11	5	1	....	1	1	....
29 years	22	15	8	5	4	4	8	....	....	2	....
30 years	34	38	20	9	12	3	6	5	3	....	1
31 years	31	13	11	5	8	4	6	1	2	2	1
32 years	47	31	18	13	16	8	9	2	2	2	2
33 years	44	16	24	12	15	12	9	3	5	1	1
34 years	51	31	32	22	19	12	5	7	4	2	1
35 years	33	49	30	16	23	18	17	6	7	3	1
36 years	33	35	33	20	22	15	9	6	8	4	5
37 years	25	28	28	20	23	13	16	6	11	7	6
38 years	35	34	30	21	39	30	21	6	13	4	4
39 years	18	31	28	32	17	30	29	7	9	7	10
40 years	9	25	19	23	25	25	35	7	12	6	6
41 years	15	19	9	14	13	18	20	16	16	7	11
42 years	15	28	11	9	22	15	17	14	19	10	8
43 years	11	10	13	12	16	19	12	9	12	10	7
44 years	13	10	11	13	15	15	13	4	14	14	15
45 years	15	17	12	12	17	13	18	10	19	12	13
46 years	12	6	4	12	11	15	9	7	8	5	13
47 years	6	14	11	12	12	4	16	10	8	16	7
48 years	6	14	11	8	12	8	14	8	12	4	13
49 years	2	12	4	4	6	10	12	8	11	4	7
50 years	6	17	6	5	7	13	9	6	12	2	15
51 years	1	2	6	1	7	6	7	5	9	7	5
52 years	5	10	5	7	6	6	5	6	7	8	9
53 years	2	1	4	3	5	6	4	4	5	4	5
54 years	2	9	2	3	7	3	6	9	6	4	9
55 years	2	1	5	6	2	5	4	2	5	5	4
56 years	3	....	2	....	1	2	6	5	4	5	6
57 years	1	3	3	2	4	4	3	4	4	....	4
58 years	1	....	3	2	2	2	1	1	5	6	3
59 years	1	....	1	1	2	....	....	1	1	4	4
60 years	2	....	2	....	3	3	6	7	4	3	1
61 years	....	1	3	1	2	1	....	2	3	4	2
62 years	1	....	1	1	3	2	....	1	1	1	1
63 years	....	1	....	1	....	....	....	2	3	....	....
64 years	....	1	....	1	....	....	1	1	1	2	....
65 years	....	....	....	....	1	....	3	2	....	3	1
66 years	....	1	1	....	2	....	....	1	1	1	....
67 years	....	....	....	....	1	....	....	....	....	....	....
68 years	....	....	....	....	....	....	1	....	....	....	....
69 years	....	....	....	....	1	....	1	....	....	....	....
70 years	....	....	....	....	....	....	....	....	....	....	....
71 years	....	....	....	....	....	....	1	....	....	1	....
72 years	....	....	1	....	....	1	....	....	....	....	....
73 years	....	1	....	....	....	....	1	....	....	....	1
74 years	....	....	....	....	....	....	....	....	....	2	....
75 years	....	....	....	....	....	....	....	....	....	....	....
76 years	....	....	1	....	....	....	....	....	....	....	....
77 years	....	....	....	....	....	....	....	....	....	....	....
78 years	....	....	....	....	....	....	....	1	....	....	....
79 years	....	....	....	....	....	....	....	....	....	....	....
80 years and over	....	....	....	....	....	....	....	....	....	....	1
Age not stated	....	1	....	....	....	....	....	....	....	....	....

Marriages by age of groom according to age of bride: 1920 — (Continued)

BRIDES AT AGE OF — (*Continued*)												
45 years	46 years	47 years	48 years	49 years	50 years	51 years	52 years	53 years	54 years	55 years	56 years	57 years
260	**152**	**166**	**195**	**134**	**148**	**93**	**129**	**81**	**88**	**95**	**73**	**60**
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
1	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
3	....	....	....	....	....	....	....	....	....	....	....	.....
......	1	....	....	....	....	....	....	....	....	....	....	.....
1	....	....	....	....	....	....	....	....	....	....	....	.....
1	....	....	....	....	....	....	....	1	....	....	....	.....
2	....	....	....	....	....	....	....	....	....	....	....	.....
......	1	1	....	1	....	....	....	....	....	....	....	.....
......	1	2	2	1	....	....	....	....	....	....	....	1
1	....	1	....	1	....	....	1	....	....	....	....	.....
......	....	....	1	1	....	....	....	....	....	....	....	.....
......	1	1	....	....	....	....	1	....	....	....	....	.....
1	2	2	....	2	1	....	....	....	1	....	....	.....
4	4	....	....	....	1	....	....	....	....	....	....	.....
6	2	1	....	1	1	....	2	1	1	....	....	.....
6	1	4	2	....	1	....	1	1	....	....	....	.....
3	2	4	1	1	1	....	....	1	....	....	....	1
9	2	2	5	1	3	....	1	1	1	....	....	.....
8	....	3	1	3	1	....	1	....	....	....	....	1
9	7	5	3	3	2	1	....	....	1	1	....	1
12	3	6	3	2	1	1	....	....	....	....	....	.....
7	5	6	4	2	4	....	3	....	....	2	....	.....
11	6	2	6	2	4	1	2	....	....	....	....	1
10	7	5	5	3	3	1	....	....	1	1	....	1
15	8	12	9	4	6	3	2	1	2	3	....	1
11	12	7	9	3	3	3	6	3	1	....	1	.....
20	6	14	11	7	4	3	5	....	1	1	1	.....
11	7	12	15	6	7	2	2	2	2	2	2	.....
12	9	7	5	6	6	4	6	1	2	1	4	1
20	8	8	8	5	16	5	8	3	1	6	1	2
11	3	6	8	5	9	3	5	4	5	3	1	2
6	4	7	13	8	6	2	11	6	3	2	5	1
9	5	8	8	4	7	11	7	4	2	7	2	.....
7	9	7	6	10	8	4	5	5	8	4	3	2
7	1	3	6	1	5	5	10	3	4	9	8	4
9	3	3	5	6	6	2	6	5	11	7	6	3
1	7	10	6	9	3	3	8	4	3	5	4	2
5	3	5	13	6	8	10	7	4	4	10	1	3
1	5	4	5	3	4	3	4	4	4	5	5	.....
5	3	4	7	6	6	1	8	6	5	9	6	8
2	4	....	4	1	3	3	1	1	4	2	1	4
3	3	....	3	1	5	7	2	....	6	1	5	1
3	2	....	4	1	....	3	4	4	2	3	4	1
2	2	1	2	1	2	1	2	3	4	....	3	.....
......	....	1	3	6	4	3	2	4	....	2	2	2
1	1	....	2	2	2	2	1	1	2	2	1	3
......	....	1	1	3	....	....	....	3	....	....	1	3
......	1	....	3	2	1	2	....	2	....	2	2	4
......	1	....	1	....	....	1	2	....	2	2	....	.....
3	....	....	....	1	1	1	....	....	....	1	1	.....
......	....	....	....	....	....	....	....	1	....	....	....	2
......	....	....	1	....	....	....	1	....	1	....	2	1
......	....	....	1	1	....	1	1	....	2	....	....	2
......	....	1	....	....	....	....	....	1	....	....	1	1
......	....	....	2	....	1	....	....	....	....	....	....	.....
......	....	....	1	1	1	....	....	1	....	1	....	.....
1	....	....	....	....	....	1	....	....	1	....	....	.....
......	....	....	....	....	....	....	....	....	....	1	....	.....
......	....	....	....	....	....	....	1	....	....	....	....	.....
......	....	....	....	1	1	....	....	....	1	....	....	1
......	....	....	....	....	....	....	....	....	....	....	....	.....

Table 45 — STATE OF NEW YORK (exclusive of New York City):

AGE OF GROOM	BRIDES AT AGE OF — (*Continued*)										
	58 years	59 years	60 years	61 years	62 years	63 years	64 years	65 years	66 years	67 years	68 years
New York State (exc. of N. Y. City)	68	46	86	24	44	35	31	32	19	11	14
15 years	....	....	....	....	....	....	....	....	....	....	.....
16 years	....	....	....	....	....	....	....	....	....	....	.....
17 years	....	....	....	....	....	....	....	....	....	....	.....
18 years	....	....	....	....	....	....	....	....	....	....	.....
19 years	....	....	....	....	....	....	....	....	....	....	.....
20 years	....	....	....	....	....	....	....	....	....	....	.....
21 years	....	....	....	....	....	....	....	....	....	....	.....
22 years	....	....	....	....	....	....	....	....	....	....	.....
23 years	....	....	....	....	....	....	....	....	....	....	.....
24 years	....	....	....	....	....	....	....	....	....	....	.....
25 years	....	....	....	....	....	....	....	....	....	....	.....
26 years	....	....	....	....	....	....	....	....	....	....	.....
27 years	....	....	....	....	....	....	....	....	....	....	.....
28 years	....	....	....	....	....	....	....	....	....	....	.....
29 years	....	....	....	....	....	....	....	....	....	....	.....
30 years	....	....	....	....	....	....	....	....	....	....	.....
31 years	....	....	....	....	....	....	....	....	....	....	.....
32 years	....	....	....	....	....	....	....	....	....	....	.....
33 years	....	....	....	....	....	....	....	....	....	....	.....
34 years	....	....	....	....	....	....	....	....	....	....	.....
35 years	....	....	....	....	....	....	....	....	....	....	.....
36 years	....	....	....	....	....	....	....	....	....	....	.....
37 years	....	1	....	....	....	....	....	....	....	....	.....
38 years	....	....	....	....	....	....	....	....	....	....	.....
39 years	....	....	....	....	....	....	....	....	....	....	.....
40 years	1	....	....	....	....	....	....	....	....	....	.....
41 years	....	....	....	....	....	....	....	....	1	....	.....
42 years	....	....	....	....	....	....	....	....	....	....	.....
43 years	....	....	....	....	....	1	....	....	....	....	.....
44 years	1	1	....	....	....	....	....	....	....	....	.....
45 years	1	1	....	....	....	....	....	....	....	....	.....
46 years	....	....	....	....	....	....	....	....	....	....	.....
47 years	2	1	....	1	....	....	....	....	....	....	.....
48 years	....	1	1	....	....	....	....	....	....	....	.....
49 years	1	....	....	....	1	....	....	....	....	....	1
50 years	....	....	3	1	....	....	....	1	....	....	.....
51 years	1	....	2	1	1	....	....	....	....	....	.....
52 years	2	1	5	....	....	....	....	....	....	....	.....
53 years	2	....	....	1	1	1	1	1	....	....	.....
54 years	2	1	1	....	1	....	....	....	....	....	1
55 years	2	1	....	....	....	2	....	1	....	....	.....
56 years	3	....	1	1	1	....	....	2	....	....	.....
57 years	2	....	2	1	2	....	2	....	....	....	.....
58 years	7	4	2	1	1	3	2	....	1	....	.....
59 years	7	3	4	2	2	....	....	1	....	....	1
60 years	7	2	9	3	3	1	1	1	1	....	1
61 years	5	2	2	1	1	....	2	....	1	....	.....
62 years	2	2	7	1	6	1	....	2	1	....	2
63 years	3	8	4	....	2	5	2	3	1	....	.....
64 years	3	2	7	1	2	3	3	....	1	....	.....
65 years	3	4	4	3	3	6	2	2	1	1	.....
66 years	1	....	4	2	4	1	4	2	3	1	.....
67 years	....	2	4	1	4	2	1	8	1	2	1
68 years	4	....	5	1	2	2	2	1	1	2	.....
69 years	....	1	3	....	3	1	2	1	....	....	2
70 years	2	2	8	....	....	1	3	....	3	3	3
71 years	1	1	....	....	3	1	....	....	....	....	.....
72 years	1	1	4	2	....	....	1	3	....	....	.....
73 years	....	3	3	....	1	1	1	....	1	....	1
74 years	1	....	1	....	....	1	1	1	....	1	.....
75 years	....	1	....	....	....	....	....	....	1	1	.....
76 years	....	....	....	....	....	....	....	1	....	....	.....
77 years	....	....	....	....	....	....	....	....	....	....	.....
78 years	....	....	....	....	....	....	....	....	....	....	.....
79 years	1	....	....	....	....	1	....	1	....	....	.....
80 yrs and over	....	....	....	....	....	1	1	....	1	....	1
Age not stated	....	....	....	....	....	....	....	....	....	....	.....

Marriages by age of groom according to age of bride: **1920**

BRIDES AT AGE OF — (*Concluded*)												
69 years	70 years	71 years	72 years	73 years	74 years	75 years	76 years	77 years	78 years	79 years	80 yrs and over	Age not stated
10	**11**	**7**	**6**	....	**2**	**7**	**2**	**1**	**1**	....	**1**	**2**
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	1	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
1	....	....	....	....	....	1	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	1
......	....	....	....	....	....	....	....	....	....	....	....	.....
1	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
1	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	1	....	....	....	....	....	....	....	....	....	.....
1	....	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	.....
......	1	....	....	....	....	....	....	....	....	....	....	.....
1	....	....	....	....	....	....	....	....	....	....		.....
......	....	....	1	....	....	....	....	....	....	....	....	.....
2	1	....	....	....	....	....	....	....	....	....	....	.....
......	....	....	....	....	....	1	....	....	....	....	....	.....
......	....	1	1	....	....	1	....	....	....	....	....	.....
......	2	1	....	....	....	....	....	....	....	....	....	.....
......	....	1	2	....	1	....	....	....	1	....	....	.....
1	1	....	....	....	1	1	....	....	....	....	1	.....
......	2	1	1	....	....	1	1	....	....	....	....	.....
......	1	1	....	....	....	....	....	....	....	....	....	.....
......	....	....	1	....	....	....	....	....	....	....	....	.....
......	1	1	....	....	....	1	....	....	....	....	....	.....
2	2	....	....	....	....	....	1	1	....	....	....	.....
......	....	....	....	....	....	....	....	....	....	....	....	1

Table 46 — STATE OF NEW YORK (exclusive of New York City)

AGE OF GROOM	All first marriages	BRIDES AT						
		13 years	14 years	15 years	16 years	17 years	18 years	19 years
New York State (exclusive N. Y. City) Total.....	38,943	4	21	151	661	1,436	4,673	4,238
16 years..................	13	.....	.....	1	3	2	3	2
17 years..................	60	.....	1	4	11	14	14	5
18 years..................	328	.....	1	8	29	47	122	51
19 years..................	728	.....	.....	15	50	99	205	142
20 years..................	1,002	.....	.....	5	46	109	208	210
21 years..................	5,052	3	3	22	118	289	1,337	1,052
22 years..................	4,042	.....	4	19	79	169	658	651
23 years..................	3,939	1	2	20	82	166	520	512
24 years..................	3,922	.....	3	15	61	142	454	443
25 years..................	3,443	.....	.....	8	49	139	315	315
26 years..................	2,994	.....	3	14	48	87	262	235
27 years..................	2,456	.....	2	10	28	59	152	174
28 years..................	2,152	.....	1	2	17	40	136	126
29 years..................	1,571	.....	.....	4	9	16	78	89
30 years..................	1,363	.....	.....	.....	13	15	58	65
31 years..................	953	.....	.....	1	7	7	36	56
32 years..................	950	.....	1	.....	4	15	43	34
33 years..................	664	.....	.....	.....	5	4	17	18
34 years..................	577	.....	.....	1	1	4	16	16
35 years..................	489	.....	.....	.....	3	6	10	14
36 years..................	340	.....	.....	1	.....	1	9	8
37 years..................	269	.....	.....	.....	.....	1	3	8
38 years..................	280	.....	.....	.....	2	1	5	3
39 years..................	204	.....	.....	.....	.....	.....	1	2
40 years..................	191	.....	.....	1	1	2	1	3
41 years..................	148	.....	.....	.....	1	.....	2	1
42 years..................	120	.....	.....	.....	1	.....	3	1
43 years..................	119	.....	.....	.....	.....	1	1	2
44 years..................	88	.....	.....	.....	.....	1	1	.....
45 years..................	72	.....	.....	.....	.....	.....	1	.....
46 years..................	65	.....	.....	.....	.....	.....	.....	.....
47 years..................	56	.....	.....	.....	.....	.....	.....	.....
48 years..................	46	.....	.....	.....	.....	.....	.....	.....
49 years..................	37	.....	.....	.....	.....	.....	1	.....
50 years and over..........	218	.....	.....	.....	.....	.....	1	.....
Age not stated............	2	.....	.....	.....	.....	.....	.....	.....

First marriages: age of groom by age of bride: 1920

AGE OF —

20 years	21 years	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years
3,741	4,071	3,469	3,059	2,664	2,181	1,772	1,430	1,136	845
1	......	......	1	......	......	......	......	......	......
1	7	......	2	1	......	......	......	......	......
23	26	9	2	7	1	......	......	1	1
94	46	35	18	7	5	5	4	3	......
159	110	67	34	19	13	8	4	3	3
727	722	325	189	111	75	33	19	12	8
593	657	488	288	184	107	58	40	13	11
495	543	458	458	259	164	101	61	45	16
405	513	450	436	400	226	150	81	62	32
336	369	402	367	325	338	173	132	68	36
245	268	327	312	331	254	238	143	93	41
175	202	243	249	244	204	196	200	120	79
144	170	202	193	186	196	198	159	145	84
111	129	116	127	115	129	116	124	109	117
63	89	84	106	143	116	91	123	95	62
38	56	56	61	81	70	82	71	63	63
35	38	58	57	70	75	79	72	72	65
30	38	29	41	48	35	52	41	46	49
15	25	31	32	44	37	43	46	40	33
19	11	28	25	30	44	26	28	34	31
8	7	12	10	16	19	31	20	22	24
7	7	9	13	14	16	20	13	14	20
3	17	13	11	8	23	18	12	19	16
2	4	5	7	6	4	9	9	14	12
2	2	4	5	3	9	12	7	10	13
3	4	3	4	1	6	4	5	8	6
1	2	9	1	2	2	4	4	5	2
......	......	3	3	2	5	4	3	7	6
1	1	1	2	......	3	4	2	3	4
......	1	1	1	3	......	2	3	3	......
1	1	......	1	1	......	4	......	1	1
1	......	......	......	1	1	4	1	1	1
2	1	......	......	1	......	2	1	......	1
1	1	......	1	......	......	1	2	......	2
......	4	1	2	1	4	4	......	5	6
......	......	......	......	......	......	......	......	......	......

Table 46 — STATE OF NEW YORK (exclusive of New York City):

AGE OF GROOM	BRIDES AT									
	30 years	31 years	32 years	33 years	34 years	35 years	36 years	37 years	38 years	39 years
New York State (exclusive of N. Y. City), total	719	402	420	282	290	226	193	137	151	106
16 years	....	....	....	....	....	....	....	....	....	.....
17 years	....	....	....	....	....	....	....	....	....	.....
18 years	....	....	....	....	....	....	....	....	....	.....
19 years	....	....	....	....	....	....	....	....	....	.....
20 years	1	2	1	....	....	....	....	....	....	.....
21 years	2	2	1	....	1	....	....	....	1	.....
22 years	12	1	3	....	4	....	2	....	1	.....
23 years	12	7	8	4	1	....	1	1	....	1
24 years	22	4	7	1	8	1	2	....	....	.....
25 years	30	20	9	6	1	2	2	....	1	.....
26 years	49	10	11	9	5	4	3	5	1	.....
27 years	40	26	22	6	6	6	4	3	4	2
28 years	61	27	24	11	7	4	6	3	4	2
29 years	61	37	25	17	13	4	5	3	1	1
30 years	80	39	38	19	18	14	12	6	6	2
31 years	57	39	41	21	21	8	3	4	5	2
32 years	53	33	47	21	31	19	13	3	5	4
33 years	51	30	35	25	26	11	14	4	5	3
34 years	30	24	30	23	35	15	16	4	8	5
35 years	32	19	16	11	16	33	14	10	11	5
36 years	18	12	17	17	16	18	17	10	9	5
37 years	21	13	10	12	12	7	15	9	7	6
38 years	16	10	12	16	14	10	15	9	10	11
39 years	16	8	8	11	9	13	12	14	6	12
40 years	7	4	13	11	6	11	5	9	14	8
41 years	11	6	9	10	6	9	....	7	7	4
42 years	6	5	9	3	6	11	3	3	5	4
43 years	12	3	6	11	5	2	4	5	5	10
44 years	2	7	2	4	5	2	4	3	7	3
45 years	4	3	1	3	4	5	4	6	6	2
46 years	2	2	3	3	4	4	1	5	2	1
47 years	3	2	2	1	3	3	3	3	2	4
48 years	1	....	2	3	3	2	3	2	2	1
49 years	2	1	2	1	1	1	1	....	....	4
50 years and over	5	6	6	2	3	6	9	6	16	4
Age not stated	....	....	....	....	....	1	....	....	....	.....

First marriages: age of groom by age of bride: 1920 — (Continued)

AGE OF — (*Continued*)											Age not stated
40 years	41 years	42 years	43 years	44 years	45 years	46 years	47 years	48 years	49 years	50 years and over	
107	55	54	33	36	38	24	24	20	15	58	1
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	1	.....	.....	.....	.....	.....	......
1	1	1	....	....	.....	1	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	1	....	.....	.....	.....	.....	.....	.....	......
1	....	1	....	....	.....	.....	.....	.....	.....	.....	......
1	....	....	....	....	.....	1	1	.....	1	.....	......
4	....	....	....	....	.....	.....	.....	.....	.....	1	......
3	3	....	....	....	.....	.....	.....	.....	.....	.....	......
2	....	1	1	....	.....	.....	.....	.....	.....	.....	......
1	1	....	....	1	.....	.....	.....	.....	.....	.....	......
4	1	....	1	....	.....	1	.....	.....	.....	.....	......
2	....	1	....	....	.....	.....	.....	.....	.....	.....	......
6	1	3	....	....	2	.....	1	.....	.....	.....	......
1	4	2	1	1	2	1	1	.....	.....	.....	......
5	....	2	1	2	.....	.....	.....	.....	1	1	......
6	4	4	....	....	1	.....	.....	1	.....	.....	......
4	5	2	2	3	2	.....	.....	1	....	1	......
12	5	....	3	....	2	3	2	1	.....	.....	......
11	4	5	5	2	1	.....	2	1	.....	.....	......
8	3	8	2	2	2	1	1	.....	1	.....	......
4	4	2	2	2	1	3	.....	1	.....	.....	......
6	1	2	3	6	4	2	1	.....	1	.....	......
2	3	5	1	....	2	1	2	2	1	.....	......
3	2	3	1	3	.....	1	2	.....	.....	3	.....
2	2	....	4	1	3	1	3	2	1	1	......
4	2	....	....	2	4	2	2	3	.....	.....	......
5	....	3	1	1	1	1	.....	.....	1	2	......
9	9	9	4	10	10	5	6	8	8	49	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	1

Table 46 — STATE OF NEW YORK (exclusive of New York City):

AGE OF GROOM	All first marriages	BRIDES AT						
		13 years	14 years	15 years	16 years	17 years	18 years	19 years
Urban Area, Total, All Ages	**21,372**	**2**	**10**	**70**	**292**	**671**	**2,239**	**2,215**
16 years	5	.....	.....	1	1	.....	2	1
17 years	28	.....	1	1	6	8	9	1
18 years	138	.....	.....	5	10	20	53	22
19 years	337	.....	.....	8	21	44	102	70
20 years	474	.....	.....	3	22	42	80	109
21 years	2,508	2	2	9	59	141	630	540
22 years	2,118	.....	1	9	30	86	315	357
23 years	2,125	.....	1	9	31	78	267	272
24 years	2,170	.....	2	9	29	70	238	243
25 years	1,952	.....	.....	6	29	67	153	164
26 years	1,742	.....	1	5	23	34	127	120
27 years	1,422	.....	1	2	9	33	74	93
28 years	1,277	.....	1	1	7	17	65	72
29 years	900	.....	.....	1	1	9	32	43
30 years	811	.....	.....	.....	6	5	28	33
31 years	539	.....	.....	.....	1	.....	12	26
32 years	552	.....	.....	.....	.....	7	17	20
33 years	396	.....	.....	.....	3	2	6	8
34 years	345	.....	.....	1	1	2	8	5
35 years	293	.....	.....	.....	.....	4	5	4
36 years	198	.....	.....	.....	.....	.....	2	6
37 years	161	.....	.....	.....	.....	1	1	3
38 years	162	.....	.....	.....	2	.....	3	.....
39 years	117	.....	.....	.....	.....	.....	.....	1
40 years	110	.....	.....	.....	.....	1	.....	2
41 years	89	.....	.....	.....	.....	.....	.....	.....
42 years	66	.....	.....	.....	1	.....	.....	.....
43 years	65	.....	.....	.....	.....	.....	.....	.....
44 years	45	.....	.....	.....	.....	.....	.....	.....
45 years	40	.....	.....	.....	.....	.....	.....	.....
46 years	28	.....	.....	.....	.....	.....	.....	.....
47 years	28	.....	.....	.....	.....	.....	.....	.....
48 years	20	.....	.....	.....	.....	.....	.....	.....
49 years	18	.....	.....	.....	.....	.....	.....	.....
50 years and over	97	.....	.....	.....	.....	.....	1	.....
Age not stated	1	.....	.....	.....	.....	.....	.....	.....

First marriages: age of groom by age of bride: 1920 — (Continued)

AGE OF — (*Continued*)

20 years	21 years	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years
2,040	2,165	1,917	1,774	1,593	1,295	1,020	850	695	503
....	......	......	......	......	......	......	......	......	....
....	1	......	1	......	......	......	......	......	....
5	11	6	......	4	1	......	......	1	....
41	20	17	6	2	4	......	1	1	....
84	48	31	17	9	7	4	3	2	2
396	374	158	85	44	32	11	7	9	4
325	327	269	161	97	52	31	22	10	4
283	301	249	272	145	84	53	39	22	7
226	275	269	252	227	137	79	44	31	18
191	198	239	219	213	208	103	75	36	22
143	157	193	196	219	161	146	88	55	26
88	122	136	148	152	122	118	123	83	50
82	99	109	124	115	131	118	91	97	47
62	70	61	80	75	77	72	69	68	75
34	48	43	70	88	74	58	81	59	34
19	35	30	25	47	41	53	45	33	43
20	16	34	38	42	41	45	45	48	40
13	24	19	19	27	25	33	23	22	32
5	14	19	20	27	22	29	25	27	23
10	3	13	15	23	30	16	19	24	16
2	3	4	4	12	9	17	11	13	16
5	4	1	6	9	10	10	8	10	9
1	10	7	6	5	16	3	9	12	12
1	1	4	3	4	2	4	6	10	6
1	1	3	1	2	4	5	5	7	5
2	1	......	2	1	3	1	2	4	4
1	1	2	1	1	......	2	......	1	....
....	......	......	2	1	1	4	2	3	3
....	......	1	......	......	1	......	2	2	1
....	......	......	......	......	......	1	2	3	....
....	......	......	......	1	......	......	......	......	....
....	......	......	......	......	......	1	1	......	1
....	......	......	......	1	......	1	1	......	....
....	1	......	......	......	......	......	1	......	1
....	......	......	1	......	......	2	......	2	2
....	......	......	......	......	......	......	......	......	....

Table 46 — STATE OF NEW YORK (exclusive of New York City):

AGE OF GROOM	BRIDES AT									
	30 years	31 years	32 years	33 years	34 years	35 years	36 years	37 years	38 years	39 years
Urban Area, Total, All Ages	455	239	252	178	168	138	112	85	87	68
16 years	....	....	....	....	....	....	....	....	....	.....
17 years	....	....	....	....	....	....	....	....	....	.....
18 years	....	....	....	....	....	....	....	....	....	.....
19 years	....	....	....	....	....	....	....	....	....	.....
20 years	....	2	....	....	....	....	....	....	....	.....
21 years	2	1	1	....	1	....	....	....	....	.....
22 years	9	1	3	....	3	....	1	....	....	.....
23 years	4	2	4	1	....	....	....	1	....	.....
24 years	10	3	2	1	5	....	....	....	....	.....
25 years	15	9	3	1	....	....	....	....	1	.....
26 years	26	5	6	5	1	2	1	1	....	.....
27 years	24	15	14	3	2	3	3	1	3	.....
28 years	48	18	11	8	5	2	2	1	3	1
29 years	40	19	19	14	4	3	3	2	....	1
30 years	56	22	25	12	10	10	8	3	3	1
31 years	37	27	26	12	11	6	2	3	2	1
32 years	35	21	28	13	20	10	7	3	....	.....
33 years	36	18	20	18	19	9	9	3	2	3
34 years	19	16	19	14	21	9	10	....	3	3
35 years	21	13	11	8	11	16	8	5	8	3
36 years	12	5	10	16	10	13	12	7	4	3
37 years	15	6	7	7	11	4	9	5	4	5
38 years	9	6	5	10	6	8	7	7	8	5
39 years	10	3	4	3	5	9	8	10	4	10
40 years	2	3	10	9	2	7	5	7	10	4
41 years	8	5	2	8	5	6	....	6	5	3
42 years	6	2	7	2	1	7	3	2	5	3
43 years	5	2	3	5	2	2	3	2	4	9
44 years	....	6	2	2	1	....	2	3	4	2
45 years	2	2	1	2	3	2	2	5	4	.....
46 years	....	2	2	2	2	3	1	3	1	1
47 years	2	1	1	....	1	1	2	2	2	3
48 years	....	....	2	....	2	1	....	....	....	1
49 years	1	1	1	....	1	1	1	....	....	3
50 years and over	1	3	3	2	3	3	3	3	7	3
Age not stated	....	....	....	....	....	1	....	....	....	.....

First marriages: Age of groom by age of bride: **1920 — (Continued)**

AGE OF — (*Continued*)											Age not stated
40 years	41 years	42 years	43 years	44 years	45 years	46 years	47 years	48 years	49 years	50 years and over	
65	27	36	20	20	17	10	13	11	6	19	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	1	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
1	....	....	....	....	.....	.....	.....	.....	1	.....	......
1	....	....	....	....	.....	.....	.....	.....	.....	.....	......
2	2	....	....	....	.....	.....	.....	.....	.....	.....	......
1	....	1	....	....	.....	.....	.....	.....	.....	.....	......
1	....	....	....	1	.....	.....	.....	.....	.....	.....	......
2	1	....	....	....	.....	.....	.....	.....	.....	.....	......
2	....	1	....	....	.....	.....	.....	.....	.....	.....	......
3	1	2	....	....	.....	.....	1	.....	.....	.....	......
.....	3	1	1	1	.....	.....	1	.....	.....	.....	......
4	....	2	1	2	.....	.....	.....	.....	1	1	......
3	....	2	....	....	.....	.....	.....	.....	.....	.....	......
2	1	....	....	2	2	.....	.....	1	.....	1	......
7	1	....	2	....	.....	2	2	.....	.....	.....	......
9	3	4	4	....	.....	.....	.....	1	.....	.....	......
5	2	7	2	....	.....	1	.....	.....	1	.....	......
3	3	....	1	2	.....	2	.....	1	.....	.....	......
3	....	2	2	3	4	1	1	.....	.....	.....	......
1	3	4	....	....	1	.....	1	1	.....	.....	......
1	2	2	....	2	.....	1	1	.....	.....	1	......
1	1	....	3	....	.....	1	2	2	.....	.....	......
2	1	....	....	1	4	1	1	1	.....	.....	......
2	....	1	....	1	.....	.....	.....	.....	1	1	......
9	3	7	3	5	6	1	3	4	2	15	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......

Table 46 — STATE OF NEW YORK (exclusive of New York City):

AGE OF GROOM	All first marriages	BRIDES AT						
		13 years	14 years	15 years	16 years	17 years	18 years	19 years
Rest of State, Total, All Ages	15,095	2	11	81	355	743	2,048	1,690
16 years	8	.....	.....	.....	2	2	1	1
17 years	32	.....	.....	3	5	6	5	4
18 years	180	.....	1	3	19	27	62	27
19 years	368	.....	.....	7	28	52	92	68
20 years	498	.....	.....	2	22	65	115	91
21 years	2,027	1	1	13	55	142	545	387
22 years	1,582	.....	3	10	48	80	284	225
23 years	1,600	1	1	11	48	86	229	208
24 years	1,540	.....	1	6	30	70	183	175
25 years	1,298	.....	.....	2	20	71	138	132
26 years	1,081	.....	2	9	20	50	113	100
27 years	913	.....	1	8	17	26	69	74
28 years	755	.....	.....	1	10	23	60	50
29 years	573	.....	.....	3	7	7	42	38
30 years	481	.....	.....	.....	7	10	26	29
31 years	365	.....	.....	1	6	7	20	26
32 years	351	.....	1	.....	4	8	23	12
33 years	242	.....	.....	.....	2	2	11	10
34 years	192	.....	.....	.....	.....	2	8	11
35 years	170	.....	.....	.....	3	2	4	8
36 years	119	.....	.....	1	.....	1	6	2
37 years	92	.....	.....	.....	.....	.....	2	4
38 years	104	.....	.....	.....	.....	1	1	3
39 years	70	.....	.....	.....	.....	.....	1	1
40 years	74	.....	.....	1	1	1	1	1
41 years	53	.....	.....	.....	1	.....	2	1
42 years	43	.....	.....	.....	.....	.....	2	1
43 years	45	.....	.....	.....	.....	1	1	1
44 years	37	.....	.....	.....	.....	1	1	.....
45 years	20	.....	.....	.....	.....	.....	1	.....
46 years	20	.....	.....	.....	.....	.....	.....	.....
47 years	23	.....	.....	.....	.....	.....	.....	.....
48 years	22	.....	.....	.....	.....	.....	.....	.....
49 years	17	.....	.....	.....	.....	.....	.....	.....
50 years and over	99	.....	.....	.....	.....	.....	.....	.....
Age not stated	1	.....	.....	.....	.....	.....	.....	.....

First marriages: Age of groom by age of bride: **1920 — (Continued)**

AGE OF — (*Continued*)

20 years	21 years	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years
1,470	1,493	1,366	1,130	937	780	641	502	383	295
1	......	......	1	......	......	......	......	......	....
1	6	......	1	1	......	......	......	......	....
17	15	3	2	3	......	......	......	......	1
53	26	15	12	4	1	5	3	2	....
69	59	35	16	10	5	4	1	1	1
272	246	141	90	61	36	19	10	3	3
225	234	183	113	72	50	24	15	3	7
190	193	185	163	103	68	41	20	21	8
155	196	171	171	151	73	59	34	28	12
127	138	144	125	95	120	57	51	31	12
90	91	116	100	94	78	84	49	33	12
74	67	101	84	75	76	71	71	32	24
55	49	87	63	60	58	68	56	41	29
42	50	46	41	39	46	37	44	34	34
23	34	32	32	59	37	30	36	31	25
17	16	23	32	27	27	27	24	26	18
13	17	23	17	26	30	28	23	21	23
13	13	10	20	19	10	17	17	20	17
8	9	10	10	14	12	13	17	11	7
9	8	12	8	7	11	9	7	8	14
5	3	7	6	4	9	10	6	9	8
2	3	6	5	4	4	9	4	3	9
2	7	4	4	3	6	4	2	5	4
1	2	1	4	1	2	3	2	2	4
1	1	1	4	1	5	6	2	2	8
1	3	3	1	......	3	2	3	4	2
....	1	5	......	1	2	2	2	3	2
....	......	1	1	1	4	......	1	4	3
1	1	......	2	......	2	4	......	......	2
....	......	1	......	2	......	1	1	......	....
....	1	......	......	......	......	1	......	1	....
1	......	......	......	1	1	2	......	1	....
1	1	......	......	......	......	1	......	......	1
1	......	......	1	......	......	1	1	......	1
....	3	......	1	......	4	2	......	3	4
....	......	......	......	......	......	......	......	......	....

Table 46 — State of New York (exclusive of New York City):

AGE OF GROOM	Brides at									
	30 years	31 years	32 years	33 years	34 years	35 years	36 years	37 years	38 years	39 years
Rest of State, Total, All Ages	229	142	146	87	105	74	63	43	50	33
16 years	....	....	....	....	....	....	....	....	....	.....
17 years	....	....	....	....	....	....	....	....	....	.....
18 years	....	....	....	....	....	....	....	....	....	.....
19 years	....	....	....	....	....	....	....	....	....	.....
20 years	1	....	1	....	....	....	....	....	....	.....
21 years	....	1	....	....	....	....	....	....	1	.....
22 years	3	....	....	....	1	....	1	....	1	.....
23 years	8	5	4	3	1	....	1	....	....	1
24 years	10	1	5	....	3	1	2	....	....	.....
25 years	13	10	4	4	1	1	2	....	....	.....
26 years	19	4	4	4	3	2	2	1	1	.....
27 years	13	11	7	....	3	3	1	....	1	2
28 years	11	9	11	3	2	2	3	2	....	.....
29 years	18	11	6	1	9	1	1	1	1	.....
30 years	20	13	13	5	8	3	2	3	....	1
31 years	19	11	12	8	9	2	1	1	2	1
32 years	17	12	15	8	10	7	5	....	4	4
33 years	12	11	12	6	5	2	5	1	3	.....
34 years	8	5	11	8	13	4	4	3	3	1
35 years	9	6	5	3	3	15	4	5	3	2
36 years	6	7	7	....	5	3	3	2	4	1
37 years	5	7	3	5	1	3	5	4	3	1
38 years	7	3	7	6	7	2	7	2	1	5
39 years	6	4	3	8	3	4	4	3	1	2
40 years	5	1	2	1	4	4	....	2	4	4
41 years	3	1	5	2	1	3	....	1	2	1
42 years	....	3	2	1	3	3	....	1	....	1
43 years	5	1	3	5	2	....	1	3	1	1
44 years	1	1	....	2	3	2	1	....	3	1
45 years	2	....	....	....	1	2	1	1	....	2
46 years	2	....	1	1	2	1	....	2	1	.....
47 years	1	1	1	1	1	1	1	1	....	1
48 years	1	....	....	1	1	1	2	2	2	.....
49 years	1	....	1	1	....	....	....	....	....	1
50 years and over	4	3	1	....	....	2	4	2	8	.....
Age not stated	....	....	....	....	....	....	....	....	....	.....

First marriages: Age of groom by age of bride: 1920 — (Continued)

AGE OF — (*Continued*)											Age not stated
40 years	41 years	42 years	43 years	44 years	45 years	46 years	47 years	48 years	49 years	50 years and over	
32	23	15	12	13	18	13	9	9	8	33	1
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	1	.....	.....	.....	.....	.....	......
1	1	....	....	....	.....	1	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
1	....	1	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	1	1	....	.....	.....	......
3	....	....	....	....	.....	.....	.....	.....	.....	1	......
1	1	....	....	....	.....	.....	.....	.....	.....	.....	......
1	....	....	1	....	.....	.....	.....	.....	.....	.....	......
.....	1	....	....	....	.....	.....	.....	.....	.....	.....	......
2	....	....	1	....	.....	1	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
2	....	1	....	....	2	.....	.....	.....	.....	.....	......
.....	1	1	....	....	1	1	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
3	4	2	....	....	1	.....	.....	1	.....	.....	......
2	2	2	2	1	.....	.....	.....	.....	.....	.....	......
3	3	....	1	....	2	1	.....	1	.....	.....	......
1	1	1	1	2	1	.....	1	.....	.....	.....	......
2	1	1	....	1	2	.....	1	.....	.....	.....	......
1	1	....	1	....	1	1	.....	.....	.....	.....	......
3	1	....	1	2	.....	1	.....	.....	1	.....	......
.....	....	1	1	....	.....	1	1	1	.....	.....	......
1	....	1	1	1	.....	.....	1	.....	.....	2	......
1	....	....	....	1	3	.....	1	.....	1	1	......
2	1	....	....	1	.....	1	1	2	.....	.....	......
2	....	2	1	....	1	1	.....	.....	.....	1	......
.....	5	2	1	4	3	3	2	4	6	28	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	1

Table 46 — STATE OF NEW YORK (exclusive of New York City):

AGE OF GROOM	All first marriages	BRIDES AT						
		13 years	14 years	15 years	16 years	17 years	18 years	19 years
Nonresidents, Total, All Ages	2,476	.....	.....	.....	14	22	386	333
16 years	......	.....	.....	.....	.....	.....	.....	......
17 years	......	.....	.....	.....	.....	.....	.....	......
18 years	10	.....	.....	.....	.....	.....	7	2
19 years	23	.....	.....	.....	1	3	11	4
20 years	30	.....	.....	.....	2	2	4	10
21 years	517	.....	.....	.....	4	6	162	125
22 years	347	.....	.....	.....	1	3	59	69
23 years	214	.....	.....	.....	3	2	24	32
24 years	212	.....	.....	.....	2	2	33	25
25 years	193	.....	.....	.....	.....	1	24	19
26 years	171	.....	.....	.....	.....	3	22	15
27 years	121	.....	.....	.....	.....	.....	9	7
28 years	120	.....	.....	.....	.....	.....	11	4
29 years	98	.....	.....	.....	1	.....	4	8
30 years	71	.....	.....	.....	.....	.....	4	3
31 years	49	.....	.....	.....	.....	.....	4	4
32 years	47	.....	.....	.....	.....	.....	3	2
33 years	26	.....	.....	.....	.....	.....	.....	......
34 years	40	.....	.....	.....	.....	.....	.....	......
35 years	26	.....	.....	.....	.....	.....	1	2
36 years	23	.....	.....	.....	.....	.....	1	......
37 years	16	.....	.....	.....	.....	.....	.....	1
38 years	14	.....	.....	.....	.....	.....	1	......
39 years	17	.....	.....	.....	.....	.....	.....	......
40 years	7	.....	.....	.....	.....	.....	.....	......
41 years	6	.....	.....	.....	.....	.....	.....	......
42 years	11	.....	.....	.....	.....	.....	1	......
43 years	9	.....	.....	.....	.....	.....	.....	1
44 years	6	.....	.....	.....	.....	.....	.....	......
45 years	12	.....	.....	.....	.....	.....	.....	......
46 years	7	.....	.....	.....	.....	.....	.....	......
47 years	5	.....	.....	.....	.....	.....	.....	......
48 years	4	.....	.....	.....	.....	.....	.....	......
49 years	2	.....	.....	.....	.....	.....	1	......
50 years and over	22	.....	.....	.....	.....	.....	.....	......
Age not stated	......	.....	.....	.....	.....	.....	.....	......

First Marriages: Age of groom by age of bride: 1920 — (Continued)

AGE OF — (*Continued*)

20 years	21 years	22 years	23 years	24 years	25 years	26 years	27 years	28 years	29 years
231	**413**	**186**	**155**	**139**	**106**	**101**	**78**	**58**	**47**
......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
1	......	......	......	......	......	......	......	......	......
......	......	3	......	1	......	......	......	......	......
6	3	1	1	......	1	......	......	......	......
59	102	26	14	6	7	3	2	......	1
43	96	36	14	15	5	3	3	......	......
22	49	24	23	11	12	7	2	2	1
24	42	10	13	22	16	12	3	3	2
18	33	19	23	17	10	13	6	1	2
12	20	18	16	18	15	8	6	5	3
13	13	6	17	17	6	7	6	5	5
7	22	6	6	11	7	12	12	7	8
7	9	9	6	1	6	7	11	7	9
6	7	9	4	1	5	8	6	5	2
2	5	3	4	7	2	2	2	4	2
2	5	1	2	3	4	6	4	3	2
4	1	......	2	2	......	2	1	4	......
2	2	2	2	3	3	1	4	2	3
......	......	3	2	......	3	1	2	2	1
1	1	1	......	......	1	4	3	......	......
......	......	2	2	1	2	1	1	1	2
......	......	2	1	......	1	1	1	2	......
......	1	......	......	1	......	2	1	2	2
......	......	......	......	......	......	1	......	1	......
......	......	......	1	......	......	1	......	......	......
......	......	2	......	......	......	......	2	1	......
......	......	2	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	1	1
......	1	......	1	1	......	......	......	......	......
1	......	......	1	......	......	3	......	......	1
......	......	......	......	......	......	1	......	......	......
1	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......
......	1	1	......	1	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......

Table 46 — STATE OF NEW YORK (exclusive of New York City): *First marriages:*

AGE OF GROOM	BRIDES AT									
	30 years	31 years	32 years	33 years	34 years	35 years	36 years	37 years	38 years	39 years
Nonresidents, Total, All Ages	35	21	22	17	17	14	18	9	14	5
16 years	....	....	....	....	....	....	....	....	....	....
17 years	....	....	....	....	....	....	....	....	....	....
18 years	....	....	....	....	....	....	....	....	....	....
19 years	....	....	....	....	....	....	....	....	....	....
20 years	....	....	....	....	....	....	....	....	....	....
21 years	....	....	....	....	....	....	....	....	....	....
22 years	....	....	....	....	....	....	....	....	....	....
23 years	....	....	....	....	....	....	....	....	....	....
24 years	2	....	....	....	....	....	....	....	....	....
25 years	2	1	2	1	....	1	....	....	....	....
26 years	4	1	1	....	1	....	....	3	....	....
27 years	3	....	1	3	1	....	....	2	....	....
28 years	2	....	2	....	....	....	1	....	1	1
29 years	3	7	....	2	....	....	1	....	....	....
30 years	4	4	....	2	....	1	2	....	3	....
31 years	1	1	3	1	1	....	....	....	1	....
32 years	1	....	4	....	1	2	1	....	1	....
33 years	3	1	3	1	2	....	....	....	....	....
34 years	3	3	....	1	1	2	2	1	2	1
35 years	2	....	....	....	2	2	2	....	....	....
36 years	....	....	....	1	1	2	2	1	1	1
37 years	1	....	....	....	....	....	1	....	....	....
38 years	....	1	....	....	1	....	1	....	1	1
39 years	1	1	1	....	1	....	....	1	1	....
40 years	....	....	1	1	....	....	....	....	....	....
41 years	....	....	2	....	....	....	....	....	....	....
42 years	....	....	....	....	2	1	....	....	....	....
43 years	2	....	....	1	1	....	....	....	....	....
44 years	1	....	....	....	1	....	1	....	....	....
45 years	....	1	....	1	....	1	1	....	2	....
46 years	....	....	....	....	....	....	....	....	....	....
47 years	....	....	....	....	1	1	....	....	....	....
48 years	....	....	....	2	....	....	1	....	....	....
49 years	....	....	....	....	....	....	....	....	....	....
50 years and over	....	....	2	....	....	1	2	1	1	1
Age not stated	....	....	....	....	....	....	....	....	....	....

Age of groom by age of bride: 1920 — (Concluded)

AGE OF — (*Concluded*)											Age not stated
40 years	41 years	42 years	43 years	44 years	45 years	46 years	47 years	48 years	49 years	50 years and over	
10	**5**	**3**	**1**	**3**	**3**	**1**	**2**	.....	**1**	**6**	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	1	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
1	....	....	....	....	.....	.....	.....	.....	.....	.....	......
1	....	....	....	....	1	.....	.....	.....	.....	.....	......
1	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	2	....	....	....	.....	.....	.....	.....	.....	.....	......
2	1	....	....	....	.....	.....	.....	.....	.....	.....	......
1	....	....	....	....	.....	.....	1	.....	.....	.....	......
1	....	....	....	1	.....	.....	.....	.....	.....	.....	......
.....	....	2	....	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	1	.....	.....	.....	.....	.....	.....	......
1	....	....	....	....	1	.....	.....	.....	1	.....	......
1	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	1	....	1	....	.....	.....	.....	.....	.....	.....	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......
1	....	....	....	....	.....	.....	.....	.....	.....	.....	......
.....	1	....	....	1	1	1	1	.....	.....	6	......
.....	....	....	....	....	.....	.....	.....	.....	.....	.....	......

Table 47 — STATE OF NEW YORK (exclusive of New York City): *Marriages by*

AGE AT MARRIAGE		Total	NUMBER OF GROOMS AND BRIDES									
			1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
State of New York (exc. N. Y. C.) Total marriages (residents and nonresidents).......	**Grooms.**	**48,421**	**4,627**	**5,141**	**5,394**	**4,118**	**3,257**	**2,758**	**2,216**	**1,780**	**1,276**	**1,185**
	Brides...	**48,421**	**2,639**	**1,744**	**1,119**	**764**	**520**	**348**	**225**	**173**	**102**	**101**
Under 15 years..	Grooms.	.....	....	....	....	....	....	....	....	....	....	....
	Brides...	25	....	....	....	....	....	....	....	....	....	....
15–19 years.....	Grooms.	1,147	265	132	62	18	....	....	....	....	....	....
	Brides...	11,610	67	8	2	....	....	....	....	....	....	....
20–24 years.....	Grooms.	18,626	2,562	2,899	3,162	1,942	1,289	727	251	93	18	4
	Brides...	18,431	1,132	528	224	56	12	9	3	....	....	....
25–29 years.....	Grooms.	14,172	1,152	1,359	1,366	1,352	1,263	1,177	1,082	920	574	375
	Brides...	9,180	850	691	467	327	194	78	39	20	6	2
30–34 years....	Grooms.	6,145	306	367	432	397	446	484	445	367	348	338
	Brides..	3,675	287	264	194	301	122	107	64	52	24	20
35–39 years.....	Grooms.	3,119	135	141	152	156	140	156	189	175	148	211
	Brides...	2,136	134	99	115	81	82	69	43	41	29	31
40–44 years.....	Grooms.	1,722	83	84	67	87	76	67	93	73	60	91
	Brides...	1,230	68	54	47	41	47	30	31	25	16	11
45–49 years.....	Grooms.	1,197	47	59	51	58	39	48	67	43	55	55
	Brides...	907	41	46	30	26	28	27	19	13	14	19
50–54 years.....	Grooms.	882	28	35	35	39	47	44	27	46	34	34
	Brides...	539	24	26	19	12	17	14	11	7	5	7
55–50 years....	Grooms	598	25	20	33	24	23	20	29	28	20	35
	Brides...	342	21	17	8	12	10	6	10	4	2	4
60 years and over	Grooms.	810	24	45	34	45	34	35	33	35	19	42
	Brides...	341	15	11	13	8	8	8	5	11	6	7
Age not stated..	Grooms.	3	....	....	....	....	....	....	....	....	....	....
	Brides...	2	....	....	....	....	....	....	....	....	....	....
Urban area * Residents....	**Grooms.**	**26,507**	**2,597**	**2,880**	**2,986**	**2,263**	**1,899**	**1,523**	**1,197**	**956**	**691**	**644**
	Brides...	**26,507**	**1,461**	**935**	**587**	**425**	**294**	**188**	**106**	**84**	**55**	**59**
Under 15 years.	Grooms.	.....	....	....	....	....	....	....	....	....	....	....
	Brides...	12	....	....	....	....	....	....	....	....	....	....
15–19 years.....	Grooms.	513	130	55	28	10	....	....	....	....	....	....
	Brides...	5,696	31	3	1	....	....	....	....	....	....	....
20–24 years.....	Grooms.	9,754	1,371	1,553	1,618	998	675	359	116	44	11	2
	Brides...	10,247	580	251	95	22	4	4	....	....	....	....
25–29 years.....	Grooms.	8,171	715	827	848	779	741	671	562	475	291	195
	Brides...	5,374	517	383	248	171	98	40	17	9	3	1
30–34 years.....	Grooms.	3,588	178	228	267	250	272	284	270	202	201	194
	Brides...	2,183	172	170	118	122	72	57	29	25	12	11
35–39 years.....	Grooms.	1,820	87	87	101	89	89	83	110	104	90	122
	Brides...	1,270	71	59	70	57	54	38	20	22	16	15
40–44 years.....	Grooms.	947	56	51	47	57	51	43	59	51	30	43
	Brides...	707	38	26	24	21	32	22	19	15	10	8
45–49 years.....	Grooms.	629	21	32	31	30	25	29	34	27	29	34
	Brides...	469	20	22	12	13	16	15	14	4	8	12
50–54 years.....	Grooms.	443	17	23	11	17	23	28	14	26	20	19
	Brides...	260	12	11	9	8	11	4	2	4	4	5
55–59 years.....	Grooms.	293	15	9	23	9	9	10	16	12	8	20
	Brides...	150	14	5	1	8	5	2	4	1	1	3
60 years and over	Grooms.	348	7	15	12	15	14	16	16	15	11	15
	Brides...	129	6	5	9	3	2	6	1	4	1	4
Age not stated..	Grooms.	1	....	....	....	....	....	....	....	....	....	....
	Brides...	1	....	....	....	....	....	....	....	....	....	....

* For definition of " Urban " and " Rural " see footnotes, pages 360–61.

elative ages of brides and grooms according to the residence of the bride: **1920**

OLDER THAN CONSORT BY —										Number older than consort	Number younger than consort	Number of equal age	Difference in age unknown
11 years	12 years	13 years	14 years	15 years	16 years	17 years	18 years	19 years	20 years and over				
831	651	499	370	334	240	195	160	119	586	35,837	7,970	4,610	4
68	40	21	25	12	15	15	12	7	20	7,970	35,837	4,610	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	477	388	282	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	77	11,251	282	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12,947	3,346	2,333	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,964	14,133	2,333	1
179	49	15	6	.....	.....	.....	.....	.....	.....	10,869	2,115	1,188	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,675	5,317	1,188	.....
254	266	170	111	70	30	14	3	2	.....	4,850	939	356	.....
7	6	1	1	.....	1	.....	.....	.....	.....	1,351	1,968	356	.....
161	134	126	83	81	77	71	51	15	22	2,424	520	175	.....
21	10	6	6	1	4	2	.....	.....	.....	774	1,186	175	1
90	74	75	62	58	35	31	31	27	102	1,366	255	101	.....
18	8	4	6	4	4	5	3	.....	1	423	706	101	.....
46	48	40	43	36	28	28	22	24	112	949	182	66	.....
11	9	2	4	2	2	3	6	5	8	315	526	66	.....
36	28	30	26	39	23	20	14	23	118	726	114	42	.....
2	3	2	3	2	4	4	1	1	4	168	329	42	.....
30	19	23	11	24	23	9	14	9	82	501	68	28	1
4	2	5	2	2	.....	1	2	.....	3	115	199	28	.....
35	33	20	28	26	24	22	25	19	150	728	43	39	.....
4	2	1	3	1	.....	.....	.....	1	4	108	197	39	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
426	343	250	166	147	113	102	71	59	224	19,537	4,290	2,678	2
38	16	11	9	5	5	4	2	4	2	4,290	19,537	2,678	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	223	158	132	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35	5,529	132	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,747	1,709	1,298	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	956	7,993	1,298	.....
72	19	3	2	.....	.....	.....	.....	.....	.....	6,200	1,234	737	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,487	3,150	737	.....
130	138	77	45	24	12	5	2	1	.....	2,780	566	242	.....
5	3	1	.....	.....	.....	.....	.....	.....	.....	797	11,44	242	.....
98	83	69	36	41	36	41	18	4	11	1,399	308	113	.....
9	2	4	3	1	1	.....	.....	.....	.....	442	714	113	1
46	40	38	29	27	17	13	12	11	33	754	128	65	.....
11	5	1	3	2	2	2	1	.....	.....	242	400	65	.....
23	26	25	24	17	10	15	12	11	38	502	89	38	.....
8	3	1	1	1	1	1	.....	3	2	157	274	38	.....
20	17	14	12	22	13	9	7	17	46	375	49	19	.....
1	1	1	.....	1	1	1	.....	1	.....	77	164	19	.....
15	8	11	4	11	16	4	7	5	35	247	30	15	1
2	2	3	1	.....	.....	.....	1	.....	.....	53	91	15	.....
22	12	13	14	5	9	15	13	10	61	310	19	19	.....
2	.....	.....	1	.....	.....	.....	.....	.....	.....	44	66	19	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1

Table 47 — STATE OF NEW YORK (exclusive of New York City): *Marriages by*

AGE AT MARRIAGE		Total	NUMBER OF GROOMS AND BRIDES									
			1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
Rural area * Residents....	**Grooms**	**18,445**	**1,691**	**1,888**	**1,969**	**1,576**	**1,279**	**1,083**	**850**	**711**	**499**	**441**
	Brides...	**18,445**	**992**	**691**	**455**	**288**	**193**	**129**	**102**	**75**	**41**	**33**
Under 15 years..	Grooms..	.....	....	....	....	....	....	....	....	....	....	....
	Brides...	13	....	....	....	....	....	....	....	....	....	....
15–19 years.....	Grooms.	600	124	74	33	8	....	....	....	....	....	....
	Brides..	5,128	34	5	1	....	....	....	....	....	....	....
20–24 years.....	Grooms..	7,474	977	1,112	1,238	817	553	332	130	47	7	2
	Brides...	6,870	490	243	117	34	7	5	3	....	....	....
25–29 years.....	Grooms.	5,139	369	445	444	479	460	441	430	391	258	158
	Brides...	3,218	271	256	191	137	82	33	22	10	3	1
30–34 years.....	Grooms..	2,144	109	117	137	131	147	177	144	137	118	112
	Brides...	1,192	89	79	64	65	44	39	29	23	12	9
35–39 years.....	Grooms..	1,036	35	46	41	54	41	59	62	57	45	71
	Brides...	674	45	31	36	16	22	25	21	14	11	9
40–44 years.....	Grooms.	604	21	23	18	20	22	21	22	17	22	34
	Brides...	413	24	23	15	14	11	7	8	9	5	2
45–49 years.....	Grooms..	435	23	23	12	13	9	13	27	12	18	18
	Brides...	357	17	22	14	10	10	7	4	9	4	6
50–54 years.....	Grooms.	355	8	11	20	17	20	14	11	17	12	12
	Brides...	225	10	12	8	4	6	7	6	2	1	2
55–59 years.....	Grooms.	249	8	10	6	9	9	9	9	16	12	12
	Brides...	153	5	11	5	3	5	4	5	2	1	1
60 years and over	Grooms.	407	17	27	20	28	18	17	15	17	7	22
	Brides...	201	7	6	4	5	6	2	4	6	4	3
Age not stated..	Grooms.	2	....	....	....	....	....	....	....	....	....	....
	Brides...	1	....	....	....	....	....	....	....	....	....	....
Nonresidents of State........	**Grooms**.	**3,469**	**339**	**373**	**439**	**279**	**179**	**152**	**169**	**113**	**86**	**100**
	Brides...	**3,469**	**186**	**118**	**77**	**51**	**33**	**31**	**17**	**14**	**6**	**9**
Under 15 years..	Grooms.	.....	....	....	....	....	....	....	....	....	....	....
	Brides...	.....	....	....	....	....	....	....	....	....	....	....
15–19 years.....	Grooms.	34	11	3	1	....	....	....	....	....	....	....
	Brides...	786	2	....	....	....	....	....	....	....	....	....
20–24 years.....	Grooms.	1,398	214	234	306	127	61	36	5	2	....	....
	Brides...	1,314	62	34	12	....	1	....	....	....	....	....
25–29 years.....	Grooms.	862	68	87	74	94	62	65	90	54	25	22
	Brides...	588	62	52	28	19	14	5	....	1	....	....
30–34 years.....	Grooms.	413	19	22	28	16	27	23	31	28	29	32
	Brides...	300	26	15	12	14	6	11	6	4	....	....
35–39 years.....	Grooms.	263	13	8	10	13	10	14	17	14	13	18
	Brides...	192	18	6	9	8	6	6	2	5	2	7
40–44 years.....	Grooms.	171	6	10	2	10	3	3	12	5	8	14
	Brides...	110	6	5	8	6	4	1	4	1	1	1
45–49 years.....	Grooms.	133	3	4	8	6	5	6	6	4	8	3
	Brides...	81	4	2	4	3	2	5	1	....	2	1
50–54 years.....	Grooms.	84	3	1	4	5	4	2	2	3	2	3
	Brides...	54	2	3	2	....	....	3	3	1	....	....
55–59 years.....	Grooms.	56	2	1	4	6	5	1	4	....	....	3
	Brides...	30	2	1	2	1	....	....	1	1	....	....
60 years and over	Grooms.	55	....	3	2	2	2	2	2	3	1	5
	Brides...	14	2	....	....	....	....	....	....	1	1	....
Age not stated..	Grooms.	.....	....	....	....	....	....	....	....	....	....	....
	Brides...	.....	....	....	....	....	....	....	....	....	....	....

* For definition of "Urban" and "Rural" see footnotes, pages 860–61.

relative ages of brides and grooms according to the residence of the bride: **1920**—(Concl'd)

OLDER THAN CONSORT BY										Number older than consort	Number younger than consort	Number of equal age	Difference in age unknown
11 years	12 years	13 years	14 years	15 years	16 years	17 years	18 years	19 years	20 years and over				
344	**254**	**205**	**171**	**143**	**109**	**83**	**74**	**53**	**293**	**13,716**	**3,119**	**1,608**	**2**
24	**22**	**8**	**15**	**5**	**10**	**10**	**7**	**3**	**16**	**3,119**	**13,716**	**1,608**	**2**
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	239	222	139	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40	4,949	139	.....
										5,215	1,426	833	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	899	5,137	833	1
102	30	11	4	.....	.....	.....	.....	.....	.....	4,022	720	397	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,007	1,814	397	.....
101	111	78	61	42	18	9	1	1	.....	1,751	297	96	.....
2	3	.....	1	.....	1	.....	.....	.....	.....	460	636	96	.....
51	36	49	37	31	34	29	28	11	10	827	163	46	.....
8	8	2	3	.....	3	2	.....	.....	.....	259	369	46	.....
36	25	30	27	22	14	16	14	14	57	475	101	28	.....
7	3	1	3	2	2	3	1	.....	1	141	244	28	.....
19	15	10	14	11	15	11	9	11	52	335	79	21	.....
2	4	1	2	1	1	1	4	2	6	127	209	21	.....
14	8	14	9	11	9	8	4	5	59	283	54	18	.....
.....	2	1	3	.....	3	3	1	.....	2	73	134	18	.....
11	11	6	6	9	7	4	6	4	38	202	35	12	.....
2	.....	2	1	1	.....	1	1	.....	3	53	88	12	.....
10	18	7	13	17	12	6	12	7	77	367	22	18	.....
2	2	1	2	1	.....	.....	.....	1	4	60	123	18	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
61	**54**	**44**	**33**	**44**	18	10	15	7	**69**	**2,584**	561	**324**	.....
6	2	2	1	2	.....	1	3	.....	2	561	2,584	324	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	8	11	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	773	11	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	985	211	202	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	109	1,003	202	.....
5	.....	1	.....	.....	.....	.....	.....	.....	.....	647	161	54	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	181	353	54	.....
23	17	15	5	4	.....	.....	.....	.....	.....	319	76	18	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	94	188	18	.....
12	15	8	10	9	7	1	5	.....	1	198	49	16	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	73	103	16	.....
8	9	7	6	9	4		5	2	12	137	26	8	.....
.....	.....	2	.....	.....	.....	2	1	.....	.....	40	62	8	.....
4	7	5	5	8	3	2	1	2	22	112	14	7	.....
1	2	.....	1	.....	.....	1	2	.....	.....	31	43	7	.....
2	3	2	5	6	1	3	3	1	13	68	11	5	.....
1	.....	.....	.....	1	.....	.....	.....	.....	2	18	31	5	.....
4	.....	6	1	4	.....	1	1	.....	9	52	3	1	.....
.....	.....	.....	.....	1	.....	.....	.....	.....	.....	9	20	1	.....
3	3	.....	1	4	3	1	.....	2	12	51	2	2	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	8	2	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Table 48 — STATE OF NEW YORK (exclusive of New York City): *Marriages*

CONJUGAL CONDITION OF GROOMS	All marriages		
		Single	Total
New York State (exclusive of New York City) — Residents and nonresidents	48,421	42,218	4,813
Single	42,025	38,943	2,246
Widowed — Total	5,233	2,575	2,294
Once	4,967	2,493	2,129
Twice	251	78	156
Three times	15	4	9
Divorced — Total	1,116	679	255
Once	1,110	674	255
Twice	5	4	....
Four times	1	1	....
Divorced and widowed — Total	47	21	18
Once divorced, once widowed	45	19	18
Once divorced, twice widowed	....	....	....
Twice divorced, once widowed	1	1	....
Once divorced, thrice widowed	1	1	....
Urban area — Residents	26,507	23,110	2,666
Single	23,150	21,372	1,321
Widowed — Total	2,812	1,413	1,215
Once	2,694	1,378	1,142
Twice	111	33	70
Three times	7	2	3
Divorced — Total	523	315	123
Once	523	315	123
Twice	....	....	....
Divorced and widowed — Total	22	10	7
Once divorced, once widowed	22	10	7
Rural area — Residents	18,445	16,303	1,758
Single	16,082	15,095	758
Widowed — Total	1,990	963	910
Once	1,869	927	830
Twice	113	36	74
Three times	6	....	6
Divorced — Total	356	235	83
Once	352	231	83
Twice	3	3	....
Four times	1	1	....
Divorced and widowed — Total	17	10	7
Once divorced, once widowed	16	9	7
Once divorced, thrice widowed	1	1	....
Nonresidents of the State	3,469	2,805	389
Single	2,793	2,476	167
Widowed — Total	431	199	169
Once	404	188	157
Twice	25	9	12
Three times	2	2	....
Divorced — Total	237	129	49
Once	235	128	49
Twice	2	1	....
Divorced and widowed — Total	8	1	4
Once divorced, once widowed	7	....	4
Once divorced, twice widowed	....	....	....
Twice divorced, once widowed	1	1	....

by conjugal condition of grooms according to conjugal condition of brides: **1920**

CONJUGAL CONDITION OF BRIDES								
WIDOWED			DIVORCED			DIVORCED AND WIDOWED		
Once	Twice	Three times	Total	Once	Twice	Total	Once divorced, once widowed	Once divorced, twice widowed
4,612	**193**	**8**	**1,338**	**1,334**	**4**	**52**	**51**	**1**
2,191	53	2	815	815	....	21	21	....
2,161	127	6	339	336	3	25	24	1
2,021	105	3	325	322	3	20	19	1
134	21	1	12	12	....	5	5	....
6	1	2	2	2	....	....	....	....
244	11	....	176	175	1	6	6	....
244	11	....	175	174	1	6	6	....
....	....	....	1	1	....	....	....	....
....	....	....	....	....	....	....	....	....
16	2	....	8	8	....	....	....	....
16	2	....	8	8	....	....	....	....
....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....
2,567	**96**	**3**	**709**	**708**	**1**	**22**	**22**	....
1,296	25	....	448	448	....	9	9	....
1,148	64	3	175	174	1	9	9	....
1,087	52	3	167	166	1	7	7	....
59	11	....	6	6	....	2	2	....
2	1	....	2	2	....	....	....	....
118	5	....	81	81	....	4	4	....
118	5	....	81	81	....	4	4	....
....	....	....	....	....	....	....	....	....
5	2	....	5	5	....	....	....	....
5	2	....	5	5	....	....	....	....
1,673	**80**	**5**	**364**	**363**	**1**	**20**	**19**	**1**
733	23	2	224	224	....	5	5	....
855	52	3	103	103	....	14	13	1
785	45	....	100	100	....	12	11	1
66	7	1	3	3	....	2	2	....
4	....	2	....	....	....	....	....	....
78	5	....	37	36	1	1	1	....
78	5	....	37	36	1	1	1	....
....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....
7	....	....	....	....	....	....	....	....
7	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....
372	**17**	....	**265**	**263**	**2**	**10**	**10**	....
162	5	....	143	143	....	7	7	....
158	11	....	61	59	2	2	2	....
149	8	....	58	56	2	1	1	....
9	3	....	3	3	....	1	1	....
....	....	....	....	....	....	....	....	....
48	1	....	58	58	....	1	1	....
48	1	....	57	57	....	1	1	....
....	....	....	1	1	....	....	....	....
4	....	....	3	3	....	....	....	....
4	....	....	3	3	....	....	....	....
....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....

Table 49 — STATE OF NEW YORK (exclusive of New York City): ***Marriages by age of brides and grooms according to conjugal condition, by residence of the bride:* 1920**

AGE AT MARRIAGE	Total		CONJUGAL CONDITION											
			SINGLE		WIDOWED				DIVORCED				WIDOWED AND DIVORCED	
					Once		More than once		Once		More than once			
	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
New York State (exclusive of New York City) Total Residents and Nonresidents....	**48,421**	**48,421**	**42,025**	**42,218**	**4,967**	**4,612**	**266**	**201**	**1,110**	**1,334**	**6**	**4**	**47**	**52**
Less than 14 years of age	.....	4	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14 years.........	.....	21	.....	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15 years.........	.....	157	.....	155	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
16 years.........	13	687	13	682	.....	5	.....	.....	.....	.....	.....	.....	.....	.....
17 years.........	61	1,484	61	1,478	.....	5	.....	.....	.....	1	.....	.....	.....	.....
18 years.........	331	4,849	331	4,817	.....	25	.....	1	.....	6	.....	.....	.....	.....
19 years.........	742	4,433	739	4,382	3	40	.....	.....	.....	11	.....	.....	.....	.....
20 years.........	1,015	3,955	1,011	3,894	4	45	.....	.....	.....	16	.....	.....	.....	.....
21 years.........	5,171	4,312	5,148	4,231	14	54	1	.....	8	25	.....	.....	.....	2
22 years.........	4,185	3,732	4,146	3,616	27	74	.....	.....	12	42	.....	.....	.....	.....
23 years.........	4,127	3,411	4,070	3,239	44	115	.....	1	13	56	.....	.....	.....	.....
24 years.........	4,128	3,021	4,050	2,833	57	116	.....	1	21	70	.....	.....	.....	1
25 years.........	3,680	2,540	3,586	2,346	70	134	.....	.....	24	59	.....	.....	.....	1
26 years.........	3,319	2,117	3,180	1,894	99	152	1	1	38	69	.....	.....	1	1
27 years.........	2,758	1,798	2,599	1,575	115	148	.....	2	43	72	1	.....	.....	1
28 years.........	2,504	1,512	2,309	1,281	152	154	2	2	41	74	.....	.....	.....	2
29 years.........	1,911	1,212	1,721	984	135	160	1	.....	51	68	2	.....	1	.....
30 years.........	1,692	1,106	1,517	852	130	171	1	2	44	80	.....	.....	.....	1
31 years.........	1,237	708	1,063	524	129	126	2	2	43	53	.....	1	.....	2
32 years.........	1,304	737	1,094	519	161	151	.....	4	48	61	.....	.....	1	2
33 years.........	989	560	782	358	154	141	3	2	50	59	.....	.....	.....	.....
34 years.........	923	564	704	373	153	139	2	1	62	50	1	.....	1	1
35 years.........	803	554	588	318	148	175	3	4	63	56	.....	.....	1	1
36 years.........	654	450	440	270	166	133	2	6	44	40	.....	.....	2	.....
37 years.........	566	347	375	193	142	116	3	3	45	33	.....	.....	1	2
38 years.........	625	430	390	232	178	147	3	5	51	39	.....	.....	3	7
39 years.........	471	356	287	158	146	152	3	7	34	34	.....	1	1	4
40 years.........	445	368	270	178	123	138	7	6	44	45	.....	.....	1	1
41 years.........	346	202	202	100	110	73	5	2	27	27	1	.....	1	.....
42 years.........	353	268	180	109	131	129	4	2	37	27	.....	.....	1	1
43 years.........	313	188	173	76	101	81	2	8	35	19	.....	.....	2	4
44 years.........	265	204	130	72	111	114	1	2	23	15	.....	.....	.....	1
45 years.........	319	260	133	81	131	135	9	11	44	32	.....	.....	2	1
46 years.........	219	152	91	48	106	80	5	7	16	15	.....	.....	1	2
47 years.........	243	166	105	53	121	95	4	4	13	13	.....	.....	.....	1
48 years.........	229	195	76	46	122	121	8	15	22	11	.....	.....	1	2
49 years.........	187	134	63	31	109	87	5	9	10	5	.....	.....	.....	2
50 years.........	242	148	74	26	148	104	12	13	8	4	.....	.....	.....	1
51 years.........	152	93	50	22	76	60	8	5	16	6	.....	.....	2	.....
52 years.........	184	129	47	24	113	87	8	7	12	10	.....	1	4	.....
53 years.........	143	81	32	21	96	49	9	6	5	5	.....	.....	1	.....
54 years.........	161	88	39	10	105	65	7	8	6	3	.....	.....	4	2
55 years.........	131	95	26	19	83	64	11	5	11	6	.....	.....	.....	1
56 years.........	125	73	20	10	82	54	10	4	10	2	.....	1	3	2
57 years.........	118	60	17	12	90	42	6	5	3	1	.....	.....	2	.....
58 years.........	138	68	21	9	97	50	8	5	9	2	.....	.....	3	2
59 years.........	86	46	11	9	59	31	10	3	4	3	.....	.....	2	.....

Table 49 — STATE OF NEW YORK (exclusive of New York City): ***Marriages by age of brides and grooms according to conjugal condition, by residence of the bride,*** **1920 — (Continued)**

AGE AT MARRIAGE	Total		CONJUGAL CONDITION											
			SINGLE		WIDOWED				DIVORCED				WIDOWED AND DIVORCED	
					Once		More than once		Once		More than once			
	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
60 years.........	141	86	15	9	112	71	9	5	4	....	....	....	1	1
61 years.........	66	24	6	3	54	19	5	1	1	1	....	....	....	....
62 years.........	79	44	5	6	67	29	5	6	2	3	....	....	....	....
63 years.........	68	35	8	1	50	29	9	3	1	2	....	....	....	....
64 years.........	58	31	6	3	43	27	5	1	4	....	....	....	....	....
65 years.........	70	32	7	3	49	23	11	5	2	1	....	....	1	....
66 years.........	50	19	......	2	46	17	2	....	1	....	....	....	1	....
67 years.........	40	11	2	1	28	10	8	....	....	....	1	....	1	....
68 years.........	42	14	3	1	32	11	5	2	2	....	....	....	....	....
69 years.........	26	10	1	1	19	8	4	1	1	....	....	....	1	....
70 years.........	36	11	2	......	26	9	8	2	....	....	....	....	....	....
71 years.........	12	7	1	1	8	5	3	1	....	....	....	....	....	....
72 years.........	24	6	2	1	17	4	5	1	....	....	....	....	....	....
73 years.........	27	......	......	......	19	......	7	....	1	....	....	....	....	....
74 years.........	17	2	......	......	13	2	4	....	....	....	....	....	....	....
75 years.........	11	7	......	......	7	6	4	1	....	....	....	....	....	....
76 years.........	13	2	......	......	10	1	3	1	....	....	....	....	....	....
77 years.........	5	1	......	......	5	1	....	....	....	....	....	....	....	....
78 years.........	3	1	......	......	2	1	....	....	1	....	....	....	....	....
79 years.........	7	......	......	......	5	......	2	....	....	....	....	....	....	....
80 years and over.	15	1	1	......	13	1	1	....	....	....	....	....	....	....
Age not stated....	3	2	2	1	1	1	....	....	....	....	....	....	....	....

Table 49 — STATE OF NEW YORK (exclusive of New York City): *Marriages by age of brides and grooms according to conjugal condition, by residence of the bride:* 1920 — (Continued)

AGE AT MARRIAGE	URBAN*													
	TOTAL URBAN		CONJUGAL CONDITION											
			SINGLE		WIDOWED				DIVORCED				WIDOWED AND DIVORCED AND CONDITION NOT STATED	
					Once		More than once		Once		More than once			
	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
Total — All ages	**26,507**	**26,507**	**23,150**	**23,110**	**2,694**	**2,567**	**118**	**99**	**523**	**708**	**....**	**1**	**22**	**22**
Less than 14 years of age	......	2	......	2	......	......	....	....	....	....	....	....	......	......
14 years	......	10	......	10	......	......	....	....	....	....	....	....	......	......
15 years	......	72	......	71	......	......	....	....	....	1	....	....	......	......
16 years	5	304	5	300	......	4	....	....	....	....	....	....	......	......
17 years	28	684	28	681	......	3	....	....	....	....	....	....	......	......
18 years	138	2,325	138	2,306	......	17	....	....	....	2	....	....	......	......
19 years	342	2,311	342	2,280	......	23	....	....	....	8	....	....	......	......
20 years	478	2,136	476	2,103	2	27	....	....	....	6	....	....	......	......
21 years	2,562	2,282	2,554	2,235	7	33	....	....	1	14	....	....	......	......
22 years	2,192	2,061	2,173	2,002	13	40	....	....	6	19	....	....	......	......
23 years	2,218	1,986	2,191	1,883	22	71	....	....	5	32	....	....	......	......
24 years	2,304	1,782	2,250	1,676	40	69	....	....	14	37	....	....	......	......
25 years	2,084	1,493	2,037	1,383	38	74	....	....	9	36	....	....	......	......
26 years	1,923	1,212	1,854	1,097	51	78	1	....	16	36	....	....	1	1
27 years	1,592	1,065	1,507	931	62	95	....	1	23	38	....	....	......	......
28 years	1,478	907	1,371	777	86	88	....	....	21	41	....	....	......	1
29 years	1,094	697	988	578	81	87	....	....	24	32	....	....	1	......
30 years	999	664	909	521	70	102	....	....	20	41	....	....	......	......
31 years	700	404	605	308	76	69	....	2	19	25	....	....	......	......
32 years	767	438	638	308	102	96	....	2	27	30	....	....	......	2
33 years	581	339	469	217	85	86	....	1	27	35	....	....	......	......
34 years	541	338	421	212	85	93	2	....	32	32	....	....	1	1
35 years	471	346	350	196	92	114	2	....	27	35	....	....	......	1
36 years	363	254	251	161	89	71	....	2	22	20	....	....	1	......
37 years	349	197	226	118	94	62	2	2	27	15	....	....	......	......
38 years	361	253	225	140	109	85	....	5	25	18	....	....	2	5
39 years	276	220	166	100	94	95	1	3	15	20	....	....	......	2
40 years	244	215	154	100	69	89	2	4	18	22	....	....	1	......
41 years	194	118	116	55	66	46	2	....	10	17	....	....	......	......
42 years	192	146	101	62	77	66	1	2	13	16	....	....	......	......
43 years	168	115	99	47	53	50	....	4	15	12	....	....	1	2
44 years	149	113	71	41	64	62	....	2	14	8	....	....	......	......
45 years	170	137	77	43	68	70	5	6	20	17	....	....	......	1
46 years	117	77	47	21	61	42	3	3	5	9	....	....	1	2
47 years	124	88	55	25	60	56	2	3	7	4	....	....	......	......
48 years	128	100	43	24	68	61	4	9	13	6	....	....	......	......
49 years	90	67	33	12	48	44	3	8	6	3	....	....	......	......
50 years	126	64	39	11	77	46	7	6	3	1	....	....	......	......
51 years	71	50	23	12	34	33	5	2	7	3	....	....	2	......
52 years	87	69	19	11	56	51	4	4	4	3	....	....	4	......
53 years	70	34	13	8	51	23	4	2	2	1	....	....	......	......
54 years	89	43	23	4	56	31	5	4	3	3	....	....	2	1
55 years	63	51	11	9	42	35	3	3	7	3	....	....	......	1
56 years	58	35	4	4	44	26	5	3	4	....	....	1	1	1
57 years	63	28	9	4	50	22	2	2	3	....	....	....	......	......
58 years	75	29	12	3	56	20	3	3	3	2	....	....	1	1
59 years	33	16	3	2	25	13	4	....	1	1	....	....	......	......

* For definition of "Urban" and "Rural" see footnotes: Pages 360-61

Table 49 — STATE OF NEW YORK (exclusive of New York City): ***Marriages by age of brides and grooms according to conjugal condition, by residence of the bride:*** **1920 — (Continued)**

AGE AT MARRIAGE	URBAN													
	TOTAL URBAN		CONJUGAL CONDITION											
			SINGLE		WIDOWED				DIVORCED				WIDOWED AND DIVORCED AND CONDITION not STATED	
					Once		More than once		Once		More than once			
	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
60 years	68	29	9	6	54	22	4	1	1	....	....	....	....	....
61 years	28	9	2	1	23	6	3	1	....	1	....	....	....	....
62 years	35	25	3	3	31	15	....	5	1	2	....	....	....	....
63 years	33	9	3	.....	24	8	6	1	....	....	....	....	....	....
64 years	22	14	1	3	18	11	3	....	....	....	....	....	....	....
65 years	31	11	2	.....	24	8	4	2	....	1	....	....	1	....
66 years	22	11	.....	2	21	9	1	....	....	....	....	....	....	....
67 years	14	3	1	.....	8	3	4	....	....	....	....	....	1	....
68 years	18	5	.....	1	15	4	2	....	1	....	....	....	....	....
69 years	11	3	.....	.....	8	3	2	....	....	....	....	....	1	....
70 years	14	4	1	.....	10	3	3	1	....	....	....	....	....	....
71 years	8	2	1	.....	5	2	2	....	....	....	....	....	....	....
72 years	8	1	.....	.....	6	1	2	....	....	....	....	....	....	....
73 years	12	.....	.....	.....	7	.....	4	....	1	....	....	....	....	....
74 years	7	.....	.....	.....	6	.....	1	....	....	....	....	....	....	....
75 years	4	2	.....	.....	.....	2	4	....	....	....	....	....	....	....
76 years	2	.....	.....	.....	2	.....	....	....	....	....	....	....	....	....
77 years	3	.....	.....	.....	3	.....	....	....	....	....	....	....	....	....
78 years	2	1	.....	.....	1	1	....	....	1	....	....	....	....	....
79 years	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....
80 years and over	6	.....	.....	.....	5	.....	1	....	....	....	....	....	....	....
Age not stated	1	1	1	.....	.....	1	....	....	....	....	....	....	....	....

Table 49 — State of New York (exclusive of New York City): ***Marriages by age of brides and grooms according to conjugal condition, by residence of bride:*** **1920 — (Continued)**

AGE AT MARRIAGE	RURAL*															
	TOTAL RURAL		CONJUGAL CONDITION													
			SINGLE		WIDOWED				DIVORCED				WIDOWED AND DIVORCED AND CONDITION NOT STATED	
					Once		More than once		Once		More than once			
	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
Total — All ages	**18,445**	**18,445**	**16,082**	**16,303**	**1,869**	**1,673**	**121**	**85**	**352**	**363**	**4**	**1**	**17**	**20**
Less than 14 years of age	......	2	......	2	......	......	....	....	....	....	....	....	.....	.....
14 years	......	11	......	11	......	......	....	....	....	....	....	....	.....	.....
15 years	......	85	......	84	......	......	....	....	....	1	....	....	.....	.....
16 years	8	368	8	367	......	1	....	....	....	....	....	....	.....	.....
17 years	33	777	33	774	......	2	....	....	....	1	....	....	.....	.....
18 years	183	2,128	183	2,116	......	8	....	....	....	3	....	....	.....	.....
19 years	376	1,770	373	1,752	3	16	....	....	....	2	....	....	.....	.....
20 years	506	1,562	505	1,541	1	16	....	....	....	5	....	....	.....	.....
21 years	2,080	1,574	2,068	1,551	6	16	....	....	6	6	....	....	.....	1
22 years	1,634	1,457	1,620	1,414	11	30	....	....	3	13	....	....	.....	.....
23 years	1,663	1,233	1,647	1,186	12	37	....	1	4	9	....	....	.....	.....
24 years	1,591	1,044	1,574	992	12	35	....	....	5	16	....	....	.....	1
25 years	1,374	897	1,340	833	25	53	....	....	9	11	....	....	.....	.....
26 years	1,189	764	1,136	684	40	65	....	....	13	15	....	....	.....	.....
27 years	1,016	619	953	552	49	45	....	1	13	20	1	....	.....	1
28 years	872	517	806	436	54	57	2	2	10	22	....	....	.....	.....
29 years	688	421	622	344	45	57	1	....	19	20	1	....	.....	.....
30 years	591	355	526	280	49	53	1	2	15	20	....	....	.....	.....
31 years	458	248	398	183	45	44	2	....	13	19	....	....	.....	2
32 years	455	244	393	179	46	41	....	1	15	23	....	....	1	.....
33 years	347	159	275	115	53	36	3	....	16	8	....	....	.....	.....
34 years	293	186	227	137	48	40	....	1	17	8	1	....	.....	.....
35 years	262	163	198	100	49	44	1	3	13	16	....	....	1	.....
36 years	237	153	155	85	60	52	1	4	20	12	....	....	1	.....
37 years	177	119	124	62	42	44	....	1	10	10	....	....	1	2
38 years	205	129	134	72	52	45	2	....	17	12	....	....	.....	.....
39 years	155	110	99	48	46	46	1	4	8	10	....	....	1	2
40 years	166	114	97	60	47	39	4	2	18	12	....	....	.....	1
41 years	118	67	73	36	39	20	1	2	4	9	....	....	1	.....
42 years	120	94	62	37	41	48	2	....	14	8	....	....	1	1
43 years	111	63	60	26	39	26	1	4	11	6	....	....	.....	1
44 years	89	75	49	25	32	44	1	....	7	5	....	....	.....	1
45 years	111	99	40	33	55	55	3	4	12	7	....	....	1	.....
46 years	76	60	34	21	33	32	2	3	7	4	....	....	.....	.....
47 years	95	63	41	26	50	30	1	1	3	6	....	....	.....	.....
48 years	73	75	26	20	41	47	1	5	4	2	....	....	1	1
49 years	80	60	26	18	51	39	2	1	1	1	....	....	.....	1
50 years	93	64	30	12	58	42	2	6	3	3	....	....	.....	1
51 years	65	37	20	10	35	23	3	2	7	2	....	....	.....	.....
52 years	75	46	21	11	47	28	3	1	4	5	....	1	.....	.....
53 years	63	37	18	12	38	18	4	3	3	4	....	....	.....	.....
54 years	59	41	12	6	42	30	2	4	2	....	....	....	1	1
55 years	54	37	10	9	32	25	8	1	4	2	....	....	.....	.....
56 years	55	29	13	6	32	21	5	1	4	....	....	....	1	1
57 years	45	26	7	6	34	17	3	2	....	1	....	....	1	.....
58 years	55	36	8	6	35	27	5	2	5	....	....	....	2	1
59 years	40	25	4	6	27	15	5	2	3	2	....	....	1	.....

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* For definition of "Urban" and "Rural" see footnotes, Pages 360-361.

Table 49 — STATE OF NEW YORK (exclusive of New York City): *Marriages by age of brides and grooms according to conjugal condition, by residence of the bride:* 1920 — (Continued)

AGE AT MARRIAGE	RURAL													
	TOTAL RURAL		CONJUGAL CONDITION											
			SINGLE		WIDOWED				DIVORCED				WIDOWED AND DIVORCED AND CONDITION NOT STATED	
					Once		More than once		Once		More than once			
	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
60 years	60	53	5	3	47	46	4	3	3	....	....	....	1	1
61 years	32	14	3	2	26	12	2	....	1	....	....	....	....	....
62 years	37	18	1	3	31	13	4	1	1	1	....	....	....	....
63 years	33	22	5	1	24	18	3	2	1	1	....	....	....	....
64 years	33	15	5	....	24	14	2	1	2	....	....	....	....	....
65 years	36	21	5	3	23	15	7	3	1	....	....	....	....	....
66 years	24	8	....	....	21	8	1	....	1	....	....	....	1	....
67 years	24	6	1	1	18	5	4	....	....	....	1	....	....	....
68 years	22	9	3	....	16	7	3	2	....	....	....	....	....	....
69 years	13	7	1	1	10	5	2	1	....	....	....	....	....	....
70 years	17	7	1	....	12	6	4	1	....	....	....	....	....	....
71 years	1	5	....	1	....	3	1	1	....	....	....	....	....	....
72 years	16	5	2	1	11	3	3	1	....	....	....	....	....	....
73 years	14	....	....	....	12	....	2	....	....	....	....	....	....	....
74 years	9	2	....	....	7	2	2	....	....	....	....	....	....	....
75 years	6	5	....	....	6	4	....	1	....	....	....	....	....	....
76 years	11	2	....	....	8	1	3	1	....	....	....	....	....	....
77 years	2	1	....	....	2	1	....	....	....	....	....	....	....	....
78 years	1	....	....	....	1	....	....	....	....	....	....	....	....	....
79 years	7	....	....	....	5	....	2	....	....	....	....	....	....	....
80 years and over	9	1	1	....	8	1	....	....	....	....	....	....	....	....
Age not stated	2	1	1	1	1	....	....	....	....	....	....	....	....	....

Table 49 — STATE OF NEW YORK (exclusive of New York City): *Marriages by age of brides and grooms according to conjugal condition, by residence of the bride:* 1920 — (Continued)

AGE AT MARRIAGE	NONRESIDENTS													
	TOTAL NON-RESIDENTS		CONJUGAL CONDITION											
			SINGLE		WIDOWED				DIVORCED				WIDOWED AND DIVORCED AND CONDITION NOT STATED	
					Once		More than once		Once		More than once			
	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
Total — All ages	3,469	3,469	2,793	2,805	404	372	27	17	235	263	2	2	8	10
15 years	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	.....	.....
16 years	.....	15	.....	15	.....	.....	....	....	....	....	....	....	.....	.....
17 years	.....	23	.....	23	.....	.....	....	....	....	....	....	....	.....	.....
18 years	10	396	10	395	.....	.....	....	....	....	1	....	....	.....	.....
19 years	24	352	24	350	.....	1	....	....	....	1	....	....	.....	.....
20 years	31	257	30	250	1	2	....	....	....	5	....	....	.....	.....
21 years	529	456	526	445	1	5	1	....	1	5	....	....	.....	1
22 years	359	214	353	200	3	4	....	....	3	10	....	....	.....	.....
23 years	246	192	232	170	10	7	....	....	4	15	....	....	.....	.....
24 years	233	195	226	165	5	12	....	1	2	17	....	....	.....	.....
25 years	222	150	209	130	7	7	....	....	6	12	....	....	.....	1
26 years	207	141	190	113	8	9	....	1	9	18	....	....	.....	.....
27 years	150	114	139	92	4	8	....	....	7	14	....	....	.....	.....
28 years	154	89	132	68	12	9	....	....	10	11	....	....	.....	1
29 years	129	94	111	62	9	16	....	....	8	16	1	....	.....	.....
30 years	102	87	82	51	11	16	....	....	9	19	....	....	.....	1
31 years	79	56	60	33	8	13	....	....	11	9	....	1	.....	.....
32 years	82	55	63	32	13	14	....	1	6	8	....	....	.....	.....
33 years	61	62	38	26	16	19	....	1	7	16	....	....	.....	.....
34 years	89	40	56	24	20	6	....	....	13	10	....	....	.....	.....
35 years	70	45	40	22	7	17	....	1	23	5	....	....	.....	.....
36 years	54	42	34	24	17	10	1	....	2	8	....	....	.....	.....
37 years	40	31	25	13	6	10	1	....	8	8	....	....	.....	.....
38 years	59	48	31	20	17	17	1	....	9	9	....	....	1	2
39 years	40	26	22	10	6	11	1	....	11	4	....	1	.....	.....
40 years	35	39	19	18	7	10	1	....	8	11	....	....	.....	.....
41 years	34	17	13	9	5	7	2	....	13	1	1	....	.....	.....
42 years	41	28	17	10	13	15	1	....	10	3	....	....	.....	.....
43 years	34	10	14	3	9	5	1	....	9	1	....	....	1	1
44 years	27	16	10	6	15	8	....	....	2	2	....	....	.....	.....
45 years	38	24	16	5	8	10	1	1	12	8	....	....	1	.....
46 years	26	15	10	6	12	6	....	1	4	2	....	....	.....	.....
47 years	24	15	9	2	11	9	1	....	3	3	....	....	.....	1
48 years	28	20	7	2	13	13	3	1	5	3	....	....	.....	1
49 years	17	7	4	1	10	4	....	....	3	1	....	....	.....	1
50 years	23	20	5	3	13	16	3	1	2	....	....	....	.....	.....
51 years	16	6	7	.....	7	4	....	1	2	1	....	....	.....	.....
52 years	22	14	7	2	10	8	1	2	4	2	....	....	.....	.....
53 years	10	10	1	1	7	8	1	1	....	....	....	....	1	.....
54 years	13	4	4	.....	7	4	....	....	1	....	....	....	1	.....
55 years	14	7	5	1	9	4	....	1	....	1	....	....	.....	.....
56 years	12	9	3	.....	6	7	....	....	2	2	....	....	1	.....
57 years	9	6	1	2	6	3	1	1	....	....	....	....	1	.....
58 years	8	3	1	.....	6	3	....	....	1	....	....	....	.....	.....
59 years	13	5	4	1	7	3	1	1	....	....	....	....	1	.....

Table 49 — STATE OF NEW YORK (exclusive of New York City): *Marriages by ag of brides and grooms according to conjugal condition, by residence of the bride:* 1920 — (Concluded)

AGE AT MARRIAGE	NONRESIDENTS													
	TOTAL NON-RESIDENTS		CONJUGAL CONDITION											
			SINGLE		WIDOWED				DIVORCED				WIDOWED AND DIVORCED AND CONDITION NOT STATED	
					Once		More than once		Once		More than once			
	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
60 years.........	13	4	1	.....	11	3	1	1	....	....	....	....	.....	.....
61 years.........	6	1	1	.....	5	1	....	....	....	....	....	....	.....	.....
62 years.........	7	1	1	.....	5	1	1	....	....	....	....	....	.....	.....
63 years.........	2	4	.....	.....	2	3	....	....	....	1	....	....	.....	.....
64 years.........	3	2	.....	.....	1	2	....	....	2	....	....	....	.....	.....
65 years.........	3	.....	.....	.....	2	.....	....		1	....	....	....	.....	.....
66 years.........	4	.....	.....	.....	4	.....	....	....	....	....	....	....	.....	.....
67 years.........	2	2	.....	.....	2	2	....	....	....	....	....	....	.....	.....
68 years.........	2	.....	.....	.....	1	.....	....	....	1	....	....	....	.....	.....
69 years.........	2	.....	.....	.....	1	.....	....	....	1	....	....	....	.....	.....
70 years.........	5	.....	.....	.....	4	.....	1	....	....	....	....	....	.....	.....
71 years.........	3	.....	.....	.....	3	.....	....	....	....	....	....	....	.....	.....
72 years.........	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	.....	.....
73 years.........	1	.....	.....	.....	.....	.....	1	....	....	....	....	....	.....	.....
74 years.........	1	.....	.....	.....	.....	.....	1	....	....	....	....	....	.....	.....
75 years.........	1	.....	.....	.....	1	.....	....	....	....	....	....	....	.....	.....
76 years.........	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	.....	.....
77 years.........	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	.....	.....
78 years.........	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	.....	.....
79 years.........	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	.....	.....
80 years and over.	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	.....	.....
Age not stated....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	.....	.....

Table 50 — STATE OF NEW YORK (exclusive of New York City): *Marriages by relati*

AGE OF GROOM	Total grooms	Number of grooms same age as bride	DIFFERENCE									
			GROOMS OLDER THAN BRIDES									
			1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
Bachelors with maids:												
Total grooms, all ages	**38,943**	**3,939**	**4,109**	**4,580**	**4,871**	**3,620**	**2,900**	**2,309**	**1,767**	**1,387**	**972**	**776**
15 years	....	....	....	....	....	....	....	....	....	....	....	....
16 years	13	3	1	....	....	....	....	....	....	....	....	....
17 years	60	14	11	4	1	....	....	....	....	....	....	....
18 years	328	121	48	29	9	2	....	....	....	....	....	....
19 years	728	142	204	99	51	15	....	....	....	....	....	....
20 years	1,002	161	211	207	110	46	5	....	....	....	....	....
21 years	5,052	723	727	1,049	1,339	289	120	22	4	3	....	....
22 years	4,042	490	659	597	650	652	169	79	19	4	....	....
23 years	3,939	458	460	541	497	510	522	165	81	23	3	1
24 years	3,922	412	435	447	511	405	445	452	143	60	15	3
25 years	3,443	338	325	365	404	367	338	315	315	138	49	8
26 years	2,994	240	254	332	310	327	267	246	235	262	87	43
27 years	2,456	203	197	203	243	250	243	201	175	175	152	58
28 years	2,152	149	156	200	195	185	196	201	167	143	125	137
29 years	1,571	116	109	123	115	129	127	127	114	129	111	89
30 years	1,363	86	63	94	125	93	116	142	106	85	88	61
31 years	953	39	57	63	63	72	82	69	79	64	55	56
32 years	950	50	34	54	65	71	71	77	75	70	57	57
33 years	664	26	34	31	51	49	48	42	51	34	49	41
34 years	577	35	23	31	24	30	33	40	46	43	37	44
35 years	489	32	17	11	16	19	32	31	33	29	27	44
36 years	340	17	18	17	17	17	12	19	25	22	20	30
37 years	269	9	15	7	12	12	10	13	21	21	13	13
38 years	280	12	9	15	9	14	16	12	11	16	16	19
39 years	204	12	6	15	12	13	9	11	8	8	17	12
40 years	191	13	8	14	9	5	11	6	12	13	4	7
41 years	148	4	11	4	7	7	....	10	8	9	9	6
42 years	120	8	3	8	4	5	3	3	11	6	3	9
43 years	119	2	2	4	4	10	5	5	4	2	5	11
44 years	88	6	3	2	1	6	3	7	3	4	2	5
45 years	72	3	....	1	5	2	2	2	6	6	4	5
46 years	55	1	....	3	1	3	2	3	1	2	5	1
47 years	56	3	1	3	1	4	....	2	2	4	2	3
48 years	46	3	2	2	4	2	....	....	2	4	1	2
49 years	37	1	....	....	1	1	1	2	3	....	5	4
50 years	40	3	1	1	1	1	5	1	....	....	2	2
51 years	31	....	....	....	2	....	1	1	1	....	3	....
52 years	29	1	....	....	1	1	2	....	2	1	....	1
53 years	18	....	....	....	....	1	....	1	1	....	2	1
54 years	25	....	1	1	....	2	....	2	1	2	1	1
55 years and over	75	3	4	2	1	3	4	....	2	5	3	2
Age not stated	2	....	....	....	....	....	....	....	....	....	....	....

ages of brides and grooms according to previous conjugal condition: **1920**

IN AGES OF GROOM AND BRIDE

BY —						GROOMS YOUNGER THAN BRIDES BY —																
11 years	12 years	13 years	14 years	15 years	More than 15 years	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	More than 15 years	Not stated
516	**387**	**294**	**199**	**152**	**440**	**2,164**	**1,396**	**813**	**524**	**314**	**179**	**110**	**80**	**37**	**41**	**28**	**14**	**5**	**3**	**...**	**15**	**2**
...	...	...	...	...	.....	.....	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	......
...	...	...	...	...	.....	2	3	2	1	...	...	1	...	...	...	...	...	...	...	...	.....	......
...	...	...	...	...	.....	14	5	1	7	...	2	1	...	...	...	...	...	...	...	...	.....	......
...	...	...	...	...	.....	51	23	26	9	2	6	...	...	...	1	1	...	...	...	...	.....	......
...	...	...	...	...	.....	94	44	35	19	8	5	5	4	3	...	...	...	...	...	...	.....	......
...	...	...	...	...	.....	109	66	33	19	13	8	4	3	3	1	2	1	...	...	...	.....	......
...	...	...	...	...	.....	326	188	110	75	33	19	10	8	2	2	1	...	1	...	...	1	......
...	...	...	...	...	.....	288	185	107	57	40	13	11	12	1	3	...	3	...	2	...	1	......
...	...	...	...	...	.....	258	165	100	59	46	16	12	6	7	4	1	...	1	1	...	2	......
...	...	...	...	...	.....	223	149	80	61	32	22	4	7	1	8	1	2	...	...	...	4	......
...	...	...	...	...	.....	173	133	67	35	31	20	9	6	1	2	2	...	1	...	...	.....	......
14	3	...	...	...	.....	142	93	41	48	11	11	9	5	4	3	5	1	...	...	...	1	......
26	10	2	...	...	.....	120	79	40	26	21	6	6	6	4	3	4	2	1	...	...	.....	......
40	17	2	1	...	.....	86	61	27	24	11	7	4	6	3	4	1	1	...	...	...	3	......
78	16	9	4	...	.....	63	38	25	17	13	4	5	3	1	1	4	...	...	...	...	1	......
65	58	14	11	...	.....	37	37	18	18	14	12	6	6	2	3	3	...	...	...	...	.....	......
38	56	36	6	7	1	41	21	21	9	3	4	4	2	2	...	1	1	...	...	...	1	......
38	35	34	43	15	5	21	30	20	13	3	6	3	1	1	...	...	1	...	...	...	.....	......
28	38	30	18	16	8	26	11	14	4	5	3	4	1	...	1	...	...	1	...	...	.....	......
32	31	24	15	16	22	15	16	4	8	5	2	...	1	...	...	...	...	...	...	...	.....	......
29	26	26	12	19	32	15	10	11	5	6	1	2	1	...	2	...	1	...	...	...	.....	......
19	15	10	12	7	26	10	9	5	1	4	2	1	1	2	1	1	...	...	...	...	.....	......
20	16	14	13	9	26	7	6	5	...	2	1	2	...	...	...	...	1	...	...	...	1	......
12	9	23	8	10	42	11	6	4	4	...	...	1	...	...	1	...	...	...	...	...	.....	......
14	9	9	4	6	21	4	4	2	2	3	2	...	...	...	...	1	...	...	...	...	.....	......
13	10	7	12	9	23	4	.....	3	...	2	3	2	1	...	...	...	...	...	...	...	.....	......
11	6	8	5	4	23	5	5	2	1	...	2	1	...	...	...	...	...	...	...	...	.....	......
5	6	2	5	4	26	2	2	2	1	1	...	1	...	...	...	...	...	...	...	...	.....	......
6	3	12	6	7	24	2	1	3	...	1	...	...	...	...	...	...	...	...	...	...	.....	......
4	2	7	2	4	19	4	2	1	...	1	...	...	...	...	...	...	...	...	...	...	.....	......
4	3	1	3	4	15	1	2	2	1	...	...	...	...	...	...	...	...	...	...	...	.....	......
4	4	3	3	2	12	2	.....	...	...	1	1	1	...	...	...	...	...	...	...	...	.....	......
3	3	3	3	2	13	2	1	...	...	1	...	...	...	...	...	...	...	...	...	...	.....	......
2	3	2	3	3	11	.....	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	......
1	...	...	1	1	14	1	.....	1	...	...	...	...	...	...	...	...	...	...	...	...	.....	......
2	2	2	...	1	15	.....	.....	...	...	...	1	...	...	...	...	...	...	...	...	...	.....	......
2	...	4	1	2	9	2	.....	1	...	1	...	...	...	...	1	...	...	...	...	...	.....	......
2	1	...	4	...	11	1	.....	...	...	...	...	1	...	...	...	...	...	...	...	...	.....	......
1	...	1	...	1	8	1	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	......
1	1	3	2	...	7	.....	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	......
2	4	6	2	3	27	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	......
...	...	...	...	...	.....	.....	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	......

Table 50 — STATE OF NEW YORK (exclusive of New York City): *Marriages by relatio*

AGE OF GROOM	Total grooms	Number of grooms same age as bride	DIFFERENC									
			GROOMS OLDER THAN BRIDES									
			1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
Divorced men with widows: Total grooms, all ages	**273**	**19**	**16**	**10**	**17**	**16**	**10**	**12**	**15**	**9**	**3**	**13**
15 years												
16 years												
17 years												
18 years												
19 years												
20 years												
21 years												
22 years	1							1				
23 years												
24 years												
25 years	2											
26 years	4	1	1						1			
27 years	5		2			1						
28 years	5	1				1						
29 years	7	1	1			1						
30 years	7		1						1		1	
31 years	6	1			1					1		
32 years	1		1									
33 years	11	2		1			1		1			2
34 years	14	1	1		1		2					1
35 years	11	1		1		2		1	2	1		
36 years	12	2		1								1
37 years	10	1	2		1							
38 years	10	1			1				1	2		2
39 years	10			1	3			1			1	
40 years	12		2		1							
41 years	6			1		1						
42 years	16	2			1	2		2	1	1		1
43 years	11			1	2	1			2			1
44 years	10		2				3					1
45 years	20	1	1	1	2	1		1	1			1
46 years	6	1							2			
47 years	5	1				1			1			
48 years	8	1	1			1		1				
49 years	1						1					
50 years	3					1						
51 years	10			3		1		2		1		1
52 years	6				1					1		
53 years	3										1	
54 years	3						1		1			
55 years and over	37	1	1		3	2	2	3	1	2		2

ages of brides and grooms according to previous conjugal condition: **1920 — (Continued)**

IN AGES OF GROOM AND BRIDE

BY —						GROOMS YOUNGER THAN BRIDES BY —																
11 years	12 years	13 years	14 years	15 years	More than 15 years	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	More than 15 years	Not stated
41	**38**	**26**	**16**	**17**	**75**	**16**	**15**	**7**	**8**	**8**	**4**	**3**	**1**	**1**	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
5	1	...	...	...	...	...	1	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
2	2	1	...	...	...	1	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
4	4	2	1	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	3	...	3	1	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...
3	4	3	2	4	1	...	1	1	1	1	...	1	1	...	...	...	...	...	...	...	...	...
3	2	3	...	...	5	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
5	2	4	...	...	4	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	4	...	1	1	5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	4	4	2	2	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	2	...	...	...	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
1	1	1	1	...	5	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	2	...	...	...	4	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	2	2	...	1	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	3	2	...	1	5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	2	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
1	1	2	3	...	7	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
1	...	...	1	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	1	...	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	1	...	3	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Table 50 — State of New York (exclusive of New York City): *Marriages by relative*

AGE OF GROOM	Total grooms	Number of grooms same age as bride	DIFFERENCE									
			GROOMS OLDER THAN BRIDES									
			1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
Widowers with widows:												
Total grooms, all ages...	**2,294**	**148**	**135**	**139**	**137**	**140**	**105**	**118**	**109**	**112**	**68**	**104**
19 years	1	....	....	....	....	....	....	....	....	....	....	....
20 years	1	....	1	....	....	....	....	....	....	....	....	....
21 years	2	1	....	....	....	....	....	....	....	....	....	....
22 years	4	....	....	....	1	2	....	1	....	....	....	....
23 years	7	2	1	1	1	....	....	....	....	....	....	....
24 years	8	....	1	1	....	....	....	....	....	1	....	....
25 years	8	2	....	....	1	....	....	....	....	1	1	....
26 years	15	3	....	1	1	1	1	....	....	1	....	....
27 years	11	1	2	1	3	1	....	....	1	....	....	....
28 years	21	2	1	5	1	....	2	....	2	....	1	1
29 years	25	4	1	3	1	2	2	1	....	1	....	....
30 years	32	5	....	3	1	2	....	1	3	1	1	....
31 years	25	2	2	2	1	3	2	2	....	2	....	....
32 years	40	2	3	1	1	3	1	4	2	3	....	4
33 years	49	3	5	1	3	3	7	5	2	....	2	3
34 years	38	1	5	2	1	3	2	....	3	3	2	1
35 years	46	3	5	2	2	....	2	3	3	2	1	2
36 years	48	1	5	4	3	6	4	4	4	....	....	4
37 years	49	1	4	3	3	2	1	4	6	5	2	1
38 years	67	4	5	6	7	5	8	4	8	4	3	3
39 years	57	4	5	4	2	7	1	....	8	2	1	3
40 years	59	7	7	3	7	7	1	....	2	3	1	1
41 years	48	3	3	3	2	2	4	2	1	2	2	1
42 years	51	2	2	1	2	7	1	1	9	4	1	2
43 years	43	2	2	....	1	1	1	8	....	1	2	2
44 years	52	4	2	5	3	2	3	2	2	1	2	5
45 years	67	4	4	4	6	3	6	2	3	8	3	3
46 years	59	6	5	7	2	2	2	2	8	3	2	....
47 years	60	1	3	6	2	5	1	2	4	....	4	2
48 years	69	5	5	3	5	4	2	6	2	3	2	4
49 years	59	1	4	3	6	2	1	2	4	1	2	4
50 years	84	7	....	5	3	4	8	10	3	6	1	4
51 years	47	1	9	....	4	2	....	5	1	1	2	1
52 years	65	6	1	2	4	7	2	1	....	3	4	1
53 years	69	4	5	10	5	2	3	5	1	6	1	....
54 years	74	7	3	3	4	4	6	2	5	3	3	4
55 years	60	5	3	1	6	3	2	1	2	....	1	3
56 years	62	1	1	7	4	3	2	5	4	3	2	2
57 years	61	4	2	3	3	1	5	1	1	6	4	4
58 years	70	3	3	1	4	4	2	5	4	6	4	7
59 years	48	1	5	....	3	3	2	1	3	8	1	2
60 years	83	7	....	5	5	3	4	4	3	7	....	5
61 years	35	....	2	1	4	2	1	2	2	1	....	3
62 years	49	7	....	6	1	2	1	3	1	4	....	3
63 years	43	4	2	....	4	5	1	1	4	2	1	2
64 years	32	2	3	1	1	4	1	2	....	2	....	2
65 years	49	2	2	4	3	3	4	3	2	2	1	1
66 years	39	3	2	4	1	3	2	4	....	1	1	1
67 years	30	3	1	5	1	1	4	1	3	2	....	1

ages of brides and grooms according to previous conjugal condition: **1920 — (Continued)**

IN AGES OF GROOM AND BRIDE																							
BY —						GROOMS YOUNGER THAN BRIDES BY —																	
11 years	12 years	13 years	14 years	15 years	More than 15 years	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	More than 15 years	
74	60	50	45	59	228	90	82	60	45	39	42	31	24	17	12	8	4	3	2	2	5	......
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	...	1	1	...	2	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...
...	...	...	...	...	...	3	...	...	...	...	...	1	1	1	...	...	...	...	...	...	1	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	1	...	...	1	1	1	...	...	1	...	...	...	...	...	...	...
...	...	...	...	...	...	2	2	2	2	...	1	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	4	1	3	2	1	...	2	...	1	...	...	...	...	...	...	...
...	...	...	...	...	...	3	...	3	...	1	...	1	...	...	...	...	...	1	...	...	...	...
...	...	...	...	...	...	4	4	...	...	3	2	1	1	...	...	...	...	...	...	...	1	...
...	...	1	...	...	...	4	...	3	1	2	2	1	...	1	...	...	...	...	...	...	...	...
1	...	...	...	...	...	1	2	1	2	1	2	1	1	1	...	1	1	...	...	...	...	...
...	1	2	...	...	1	...	2	4	3	2	2	1	1	...	...	...	...	...	...	1	1	...
1	2	...	...	...	1	1	2	1	1	...	1	2	...	...	...	1	...	...	...	...	...	...
2	...	...	...	...	1	1	2	2	2	...	3	1	...	1	1	1	...	...	...	...	...	...
...	1	2	...	1	1	4	1	1	1	...	...	4	1	1	1	...	1	...	...	...	...	...
3	1	2	...	1	1	5	2	3	...	3	...	...	3	...	...	...	...	1	...	...	...	...
...	2	2	1	1	1	1	5	1	3	1	2	...	...	...	...	...	...	...	...	...	...	...
3	2	2	1	1	...	1	1	2	3	2	2	1	1	1	...	...	...	...	...	...	...	...
...	1	...	...	2	3	2	2	1	1	2	1	...	2	...	2	...	...	...	...	...	...	...
...	...	3	5	...	6	1	6	...	1	2	2	...	1	1	...	...	...	...	...	...	...	...
1	3	1	...	...	2	4	...	3	3	1	1	1	...	...	...	...	...	...	...	1	...	...
3	...	1	2	2	4	1	2	3	1	2	1	1	...	1	1	...	...	...	1	...	...	...
1	1	2	1	2	2	3	4	3	1	1	1	2	1	...	...	...	...	...	...	...	...	...
4	3	1	1	2	3	3	3	2	1	2	...	...	1	1	...	2	1	...	...	...	...	...
3	1	2	2	3	5	2	4	...	...	...	2	1	1	...	...	1	1	...	...	...	...	...
1	2	2	1	...	7	4	2	3	1	...	1	2	1	1	...	...	...	1	...	...	...	...
3	1	...	3	6	8	...	4	2	1	1	...	2	...	...	2	...	...	...	...	...	...	...
2	2	...	...	1	4	3	2	2	2	...	1	1	...	1	...	...	...	...	...	...	...	...
3	3	2	1	3	7	1	3	2	3	1	2	...	3	...	...	...	...	...	...	...	...	...
2	2	...	1	1	8	1	6	2	...	1	...	...	...	1	1	1	...	...	...	...	...	...
1	...	1	2	1	14	3	3	1	1	...	1	...	1	...	...	...	...	...	1	...	...	...
...	4	1	...	2	11	8	2	2	1	...	...	...	...	...	1	...	...	...	...	...	1	...
5	3	3	2	3	3	2	2	...	1	1	1	...	...	2	...	...	...	...	...	...	...	...
3	...	1	1	1	14	2	...	...	2	1	...	2	...	...	...	...	...	...	...	...	...	...
4	1	2	1	2	8	2	2	...	...	3	1	...	1	...	...	...	...	...	...	...	...	...
4	2	2	1	4	2	4	1	1	...	...	1	...	...	1	1	...	...	...	...	...	...	...
5	4	4	2	5	12	3	1	1	1	1	...	...	1	...	...	...	...	...	...	...	...	...
2	1	3	...	2	6	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
2	2	...	3	...	9	1	...	1	...	...	2	1	...	...	...	...	...	...	...	...	...	...
2	3	...	1	3	3	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	1	...	1	...	8	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
...	1	1	1	3	14	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	1	1	1	2	9	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	3	...	3	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Table 50 — STATE OF NEW YORK (exclusive of New York City): ***Marriages by relative***

AGE OF GROOM	Total grooms	Number of grooms same age as bride	DIFFERENCE									
			GROOMS OLDER THAN BRIDES									
			1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
68 years	28	.....	2	1	2	2	1	.....	.....	3	.....	1
69 years	14	.....	1	.....	.....	1	1	1	3	.....	2	1
70 years	29	1	2	3	2	3	.....	2	.....	.....	.....	6
71 years	10	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....
72 years	15	.....	1	.....	.....	.....	.....	.....	2	1	.....	.....
73 years	17	.....	.....	.....	2	.....	1	.....	1	.....	1	1
74 years	16	1	.....	2	1	.....	.....	.....	1	.....	1	1
75 years and over	44	3	2	.....	1	3	2	5	1	2	2	2

ages of brides and grooms according to previous conjugal condition: **1920** — (Concluded)

IN AGES OF GROOM AND BRIDE																						
BY —						GROOMS YOUNGER THAN BRIDES BY —																
11 years	12 years	13 years	14 years	15 years	More than 15 years	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	More than 15 years	Not stated
4	2	...	...	2	7	1	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	.....
...	...	...	...	1	2	.....	.....	1	...	...	...	...	...	...	...	...	...	...	...	...	.....	.....
2	2	...	1	1	4	.....	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	.....
...	1	1	2	...	3	.....	.....	...	1	...	...	...	...	...	...	...	...	...	...	...	.....	.....
1	4	1	...	1	2	.....	.....	1	...	...	...	...	...	...	...	1	...	...	...	...	.....	.....
...	...	3	2	...	6	.....	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	.....
1	...	...	1	...	6	.....	.....	...	1	...	...	...	...	...	...	...	...	...	...	...	.....	.....
1	...	1	1	...	17	.....	.....	...	...	...	...	1	...	...	...	...	...	...	...	...	.....	.....

Table 51 — STATE OF NEW YORK (exclusive of New York City):

Line number	NATIVITY AND COLOR OF GROOMS	Total	WHITE					
			Total	COUNTRY				
				United States	Foreign born	FOREIGN		
						England, Scotland and Wales	Ireland	Germany (includes German Poland)
1	**New York State (excl. N. Y. C.) Total residents and nonresidents**	48,421	47,862	41,266	6,593	659	462	407
2	**White — total**	47,854	47,851	41,258	6,590	659	462	406
3	Native	39,496	39,495	37,356	2,136	405	243	231
4	Foreign born	8,357	8,355	3,901	4,454	254	219	175
5	England, Scotland, Wales	745	745	501	244	164	20	3
6	Ireland	377	377	179	198	11	152	5
7	Germany (includes German Poland)	504	504	345	159	9	7	100
8	Italy	3,017	3,015	1,063	1,952	8	10	6
9	Russia (includes Russian Poland)	739	738	250	488	14	......	10
10	Austria (includes Austrian Poland)	429	429	151	278	1	4	14
11	Hungary	68	68	19	49	1	......	......
12	Poland (unspecified)	780	780	319	461	3	......	10
13	Canada	907	907	667	240	28	12	10
14	Norway, Sweden, Denmark	266	266	144	122	3	5	4
15	Other foreign countries	526	526	263	263	12	9	13
16	Country of birth not stated	1	1	1	......	......	......	......
17	**Colored — total**	567	11	8	3	......	......	1
18	Negro	544	7	5	2	......	......	1
19	Other colored	23	4	3	1	......	......	......
1	**Urban Area* — Residents Total**	26,507	26,147	21,423	4,721	409	295	287
2	**White — total**	26,141	26,141	21,419	4,719	409	295	287
3	Native	20,244	20,244	18,840	1,401	257	149	172
4	Foreign born	5,897	5,897	2,579	3,318	152	146	115
5	England, Scotland, Wales	459	459	313	146	99	14	3
6	Ireland	246	246	118	128	6	102	4
7	Germany, (includes German Poland)	318	318	216	102	3	3	64
8	Italy	2,247	2,247	734	1,513	7	6	3
9	Russia (includes Russian Poland)	560	560	175	385	11	......	8
10	Austria (includes Austrian Poland)	320	320	102	218	1	4	8
11	Hungary	50	50	13	37	1	......	......
12	Poland (unspecified)	649	649	261	388	2	......	7
13	Canada	537	537	407	130	12	10	9
14	Norway, Sweden, Denmark	185	185	92	93	3	2	1
15	Other foreign countries	326	326	148	178	7	5	8
16	Country of birth not stated	......	......	......	......	......	......	......
17	**Colored — total**	366	6	4	2	......	......	......
18	Negro	363	4	3	1	......	......	......
19	Other colored	3	2	1	1	......	......	......

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* For definition of "Urban" and "Rural" see footnotes, Pages 360-361.

Marriages classified by color and nativity of bride and groom: **1920**

BRIDES									COLORED BRIDES			
OF BIRTH												
COUNTRY												
Italy	Russia (includes Russian Poland)	Austria (includes Austrian Poland)	Hungary	Poland (unspecified)	Canada	Norway, Sweden, Denmark	Other foreign countries	Country of birth not stated	Total	Negro	Other colored	Line No.
2,004	**507**	**475**	**77**	**565**	**887**	**202**	**348**	**3**	**559**	**537**	**22**	**1**
2,004	507	474	77	565	886	202	348	3	3	1	2	2
107	97	113	20	105	615	90	110	3	1	......	1	3
1,897	410	361	57	460	271	112	238	......	2	1	1	4
1	6	2	......	......	41	2	5	......	......	......	......	5
......	......	2	1	......	20	3	4	......	......	......	......	6
1	7	12	5	8	4	2	4	......	......	......	......	7
1,881	4	8	3	3	6	......	23	......	2	1	1	8
2	346	79	1	27	3	1	5	......	......	......	......	9
4	19	206	6	20	2	......	2	......	......	......	......	10
......	4	5	39	......	......	......	......	......	......	......	......	11
......	9	38	1	398	2	......	......	......	......	......	......	12
1	5	3	......	1	175	2	3	......	......	......	......	13
1	1	2	1	......	5	98	2	......	......	......	......	14
6	9	4	......	3	13	4	190	......	......	......	......	15
......	......	......	......	......	......	......	......	......	......	......	......	16
......	......	1	......	......	1	......	......	......	556	536	20	17
......	......	......	......	......	1	......	......	......	537	536	1	18
......	......	1	......	......	......	......	......	......	19	......	19	19
1,564	**400**	**352**	**56**	**484**	**526**	**127**	**221**	**3**	**360**	**358**	**2**	**1**
1,564	400	351	56	484	525	127	221	3	......	......	......	2
86	69	78	15	93	384	44	54	3	......	......	......	3
1,478	331	273	41	391	141	83	167	......	......	......	......	4
1	5	1	......	......	19	1	3	......	......	......	......	5
......	......	1	1	......	14	......	......	......	......	......	......	6
......	4	9	5	8	2	1	3	......	......	......	......	7
1,465	3	4	2	3	3	......	17	......	......	......	......	8
2	283	52	......	24	2	......	3	......	......	......	......	9
3	18	163	3	15	2	......	1	......	......	......	......	10
......	2	4	30	......	......	......	......	......	......	......	......	11
......	8	32	......	337	2	......	......	......	......	......	......	12
1	3	3	......	1	89	......	2	......	......	......	......	13
1	1	1	......	......	3	79	2	......	......	......	......	14
5	4	3	......	3	5	2	136	......	......	......	......	15
......	......	......	......	......	......	......	......	......	......	......	......	16
......	......	1	......	......	1	......	......	......	360	358	2	17
......	......	......	......	......	1	......	......	......	359	358	1	18
......	......	1	......	......	......	......	......	......	1	......	1	19

Table 51 — STATE OF NEW YORK (exclusive of New York City):

Line number	NATIVITY AND COLOR OF GROOMS	Total	WHITE					
				COUNTRY				
						FOREIGN		
			Total	United States	Foreign born	England, Scotland and Wales	Ireland	Germany (includes German Poland)
	Rural Area* — Residents							
1	**Total**	**18,445**	**18,277**	**16,758**	**1,519**	**185**	**154**	**108**
2	**White — total**	18,278	18,275	16,757	1,518	185	154	107
3	Native	16,193	16,192	15,636	556	109	86	54
4	Foreign born	2,084	2,082	1,120	962	76	68	53
5	England, Scotland, Wales	223	223	157	66	51	6	......
6	Ireland	117	117	54	63	4	50	1
7	Germany (includes German Poland)	158	158	107	51	6	4	33
8	Italy	712	710	293	417	1	3	3
9	Russia (includes Russian Poland)	156	156	64	92	3	......	1
10	Austria (includes Austrian Poland)	95	95	40	55	......	......	5
11	Hungary	17	17	5	12	......	......	......
12	Poland (unspecified)	123	123	55	68	1	......	2
13	Canada	268	268	219	49	6	......	1
14	Norway, Sweden, Denmark	50	50	30	20	......	3	3
15	Other foreign countries	165	165	96	69	4	2	4
16	Country of birth not stated	1	1	1	......	......	......	......
17	**Colored — total**	167	2	1	1	......	......	1
18	Negro	148	1	......	1	......	......	1
19	Other colored	19	1	1	......	......	......	......
	Nonresidents							
1	**Total**	**3,469**	**3,438**	**3,085**	**353**	**65**	**13**	**12**
2	**White — total**	3,435	3,435	3,082	353	65	13	12
3	Native	3,059	3,059	2,880	179	39	8	5
4	Foreign born	376	376	202	174	26	5	7
5	England, Scotland, Wales	63	63	31	32	14	......	......
6	Ireland	14	14	7	7	1	......	......
7	Germany (includes German Poland)	28	28	22	6	......	......	3
8	Italy	58	58	36	22	......	1	......
9	Russia (includes Russian Poland)	22	22	11	11	......	......	1
10	Austria (includes Austrian Poland)	14	14	9	5	......	......	1
11	Hungary	1	1	1	......	......	......	......
12	Poland (not specified)	8	8	3	5	......	......	1
13	Canada	102	102	41	61	10	2	......
14	Norway, Sweden, Denmark	31	31	22	9	......	......	......
15	Other foreign countries	35	35	19	16	1	2	1
16	Country of birth not stated	......	......	......	......	......	......	......
17	**Colored — total**	34	3	3	......	......	......	......
18	Negro	33	2	2	......	......	......	......
19	Other colored	1	1	1	......	......	......	......

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* For definition of "Urban" and "Rural" see footnotes, Pages 360-361.

Marriages classified by color and nativity of bride and groom: 1920 — (Concluded)

BRIDES									COLORED BRIDES			
OF BIRTH												
COUNTRY												
Italy	Russia (includes Russian Poland)	Austria (includes Austrian Poland)	Hungary	Poland (unspecified)	Canada	Norway, Sweden, Denmark	Other foreign countries	Country of birth not stated	Total	Negro	Other colored	Line number
420	95	111	19	72	202	53	100	......	168	148	20	1
420	95	111	19	72	202	53	100	......	3	1	2	2
20	22	30	3	9	151	33	39	......	1	......	1	3
400	73	81	16	63	51	20	61	......	2	1	1	4
......	1	1	......	......	4	1	2	......	......	......	......	5
......	......	1	......	......	2	2	3	......	......	......	......	6
1	3	2	......	......	1	......	1	......	......	......	......	7
397	1	4	1	......	1	......	6	......	2	1	1	8
......	57	26	1	1	1	1	1	......	......	......	......	9
1	1	39	3	5	......	......	1	......	......	......	......	10
......	2	1	9	......	......	......	......	......	......	......	......	11
......	1	6	1	57	......	......	......	......	......	......	......	12
......	2	......	......	......	37	2	1	......	......	......	......	13
......	......	......	1	......	1	12	......	......	......	......	......	14
1	5	1	......	......	4	2	46	......	......	......	......	15
......	......	......	......	......	......	......	......	......	......	......	......	16
......	......	......	......	......	......	......	......	......	165	147	18	17
......	......	......	......	......	......	......	......	......	147	147	......	18
......	......	......	......	......	......	......	......	......	18	......	18	19
20	12	12	2	9	159	22	27	......	31	31	......	1
20	12	12	2	9	159	22	27	......	......	......	......	2
1	6	5	2	3	80	13	17	......	......	......	......	3
19	6	7	......	6	79	9	10	......	......	......	......	4
......	......	......	......	......	18	......	......	......	......	......	......	5
......	......	......	......	......	4	1	1	......	......	......	......	6
......	......	1	......	......	1	1	......	......	......	......	......	7
19	......	......	......	......	2	......	......	......	......	......	......	8
......	6	1	......	2	......	......	1	......	......	......	......	9
......	......	4	......	......	......	......	......	......	......	......	......	10
......	......	......	......	......	......	......	......	......	......	......	......	11
......	......	......	......	4	......	......	......	......	......	......	......	12
......	......	......	......	......	49	......	......	......	......	......	......	13
......	......	1	......	......	1	7	......	......	......	......	......	14
......	......	......	......	......	4	......	8	......	......	......	......	15
......	......	......	......	......	......	......	......	......	......	......	......	16
......	......	......	......	......	......	......	......	......	31	31	......	17
......	......	......	......	......	......	......	......	......	31	31	......	18
......	......	......	......	......	......	......	......	......	......	......	......	19

Table 52 — STATE OF NEW YORK (exclusive of New York City): *Marriages by conjuga*
country of

Line number	CONJUGAL CONDITION; MONTH OF MARRIAGE; RELATIVE AGES	TOTAL		WHITE									
				TOTAL WHITE		UNITED STATES		FOREIGN BORN TOTAL		COUNTRY			
										England, Scotland and Wales		Ireland	
		Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
1	**Total**	48,421	48,421	47,854	47,862	39,496	41,266	8,357	6,593	745	659	377	462
	Conjugal Condition												
2	Single	42,025	42,218	41,565	41,775	34,651	36,536	6,913	5,237	586	525	299	396
3	Widowed	5,233	4,813	5,140	4,715	3,826	3,469	1,314	1,245	136	127	76	65
4	Once	4,967	4,612	4,878	4,519	3,610	3,322	1,268	1,196	129	118	75	62
5	More than once	266	201	262	196	216	147	46	49	7	9	1	3
6	Divorced	1,116	1,338	1,102	1,320	977	1,212	125	108	23	7	2	2
7	Once	1,110	1,334	1,096	1,316	971	1,208	125	108	23	7	2	2
8	More than once	6	4	6	4	6	4	......	......	......	......	......	......
9	Divorced and widowed	47	52	47	52	42	49	5	3	......	......	......	......
	Month of Marriage												
10	January	3,070	3,070	3,039	3,040	2,428	2,580	611	467	35	31	17	21
11	February	2,872	2,872	2,846	2,849	2,322	2,443	525	405	36	31	18	23
12	March	2,116	2,116	2,078	2,078	1,795	1,853	283	225	44	39	4	6
13	April	4,289	4,289	4,245	4,244	3,449	3,610	796	634	70	62	51	55
14	May	3,305	3,305	3,263	3,262	2,674	2,767	589	495	47	42	21	34
15	June	7,078	7,078	7,004	7,007	5,996	6,214	1,008	792	99	96	54	65
16	July	3,646	3,646	3,587	3,586	2,896	3,054	691	532	64	49	17	35
17	August	3,997	3,997	3,930	3,950	3,305	3,423	645	527	78	75	30	24
18	September	5,421	5,421	5,364	5,365	4,419	4,636	945	729	76	78	53	67
19	October	4,928	4,928	4,879	4,881	3,966	4,169	913	712	74	53	41	53
20	November	4,647	4,647	4,586	4,588	3,745	3,904	841	684	59	53	46	52
21	December	3,052	3,052	3,011	3,012	2,501	2,613	510	395	63	50	20	27
	Excess Age												
22	Equal age	4,610	4,610	4,574	4,574	4,074	4,091	500	483	56	55	23	46
23	1 year older	4,627	2,639	4,576	2,615	4,023	2,328	553	287	76	40	2	303
24	2 years older	5,141	1,744	5,086	1,724	4,404	1,505	682	219	65	33	31	25
25	3 years older	5,394	1,119	5,339	1,102	4,598	962	741	139	72	20	33	15
26	4 years older	4,118	764	4,073	754	3,350	653	723	101	50	13	22	13
27	5 years older	3,357	520	3,321	511	2,612	432	709	79	48	16	25	7
28	6 years older	2,758	348	2,719	346	2,053	288	666	58	40	11	26	4
29	7 years older	2,216	225	2,195	224	1,586	181	609	43	34	2	33	4
30	8 years older	1,780	173	1,756	171	1,247	142	509	29	34	4	11	5
31	9 years older	1,276	102	1,256	101	844	75	412	26	27	2	21	3
32	10 years older	1,185	101	1,163	99	813	75	350	24	22	3	13	1
33	11 years older	831	68	819	67	594	53	225	14	20	1	10	2
34	12 years older	651	40	642	39	462	28	180	11	11	3	7	1
35	13 years older	499	21	490	21	368	16	122	5	11	2	5	.....
36	14 years older	370	25	366	25	273	19	93	6	10	1	3	.....
37	15 years older	334	12	329	11	260	9	69	2	5	1	3	....

condition, month of marriage and relative ages of brides and grooms according to color and birth: 1920

B [illegible]MS OF BIRTH																						
Germany (includes German Poland)		Italy		Russia (includes Russian Poland)		Austria (includes Austrian Poland)		Hungary		Poland (not specified)		Canada		Norway, Sweden, Denmark		Other foreign born		Total colored		Nativity not stated		Line number
Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	
504	407	3017	2004	738	507	429	475	68	77	780	565	907	887	266	202	526	348	567	559	1	3	1
324	264	2711	1710	640	415	334	333	50	53	638	393	674	630	213	158	444	296	460	443	1	2	2
161	129	286	278	93	84	92	136	15	21	137	160	202	162	41	37	75	46	93	98	.....	1	3
153	122	278	269	93	82	91	133	14	19	136	155	187	156	40	36	72	44	89	93	.....	1	4
8	7	8	9	....	2	1	3	1	2	1	5	15	6	1	1	3	2	4	5	.....	.....	5
18	12	20	16	5	8	3	6	3	3	5	7	29	34	11	7	6	6	14	18	.....	.....	6
18	12	20	16	5	8	3	6	3	3	5	7	29	34	11	7	6	6	14	18	.....	.....	7
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	8
1	2	....	....	....	....	....	....	....	....	....	....	2	1	1	....	1	....	....	....	.....	.....	9
42	27	230	143	61	43	58	60	3	3	66	40	48	50	16	14	37	19	31	30	.....	.....	10
31	29	179	119	55	39	30	36	4	3	70	51	51	47	18	7	33	20	24	23	1	1	11
18	10	88	60	39	31	5	9	3	5	5	3	33	33	11	13	28	16	38	38	.....	.....	12
47	40	353	234	37	27	25	38	9	8	45	31	98	83	29	22	40	31	44	45	.....	.....	13
32	29	161	96	83	69	42	54	5	6	65	41	75	75	22	24	37	25	42	43	.....	.....	14
76	45	350	231	103	66	35	42	9	10	84	60	113	114	36	28	49	35	74	71	.....	1	15
42	29	250	171	58	36	36	37	6	7	59	39	99	87	21	14	39	28	59	60	.....	.....	16
27	29	191	130	71	60	34	33	9	11	78	61	60	64	25	11	42	29	47	47	.....	.....	17
57	55	341	217	72	31	49	54	8	8	98	66	103	89	26	20	57	44	57	56	.....	.....	18
43	38	349	233	74	54	51	50	5	8	101	79	85	87	24	20	60	37	49	47	.....	.....	19
64	52	321	221	49	33	47	51	3	5	97	73	75	100	23	12	57	32	61	59	.....	.....	20
25	24	204	149	36	18	17	11	4	3	12	9	67	58	15	17	47	32	41	40	.....	1	21
29	36	123	92	56	34	26	27	3	6	43	53	78	82	14	24	46	28	36	36	.....	.....	22
28	17	133	39	66	24	37	19	5	3	53	34	75	49	23	8	31	15	51	24	.....	.....	23
29	19	200	28	84	18	30	13	8	2	82	10	73	45	21	6	45	10	55	20	.....	.....	24
37	15	263	18	73	10	34	4	9	1	70	11	80	25	28	12	42	8	55	17	.....	1	25
34	13	270	16	64	6	50	11	6	2	69	2	90	16	25	2	43	7	45	10	.....	.....	26
30	9	309	8	70	1	35	2	4	....	88	6	53	16	14	9	33	5	36	9	.....	.....	27
32	6	311	11	63	....	25	6	7	1	81	5	32	7	14	4	35	3	39	2	.....	.....	28
34	4	292	8	51	3	33	3	2	....	44	2	42	13	14	3	30	1	21	1	.....	.....	29
27	5	238	3	41	1	19	....	4	....	52	1	41	5	14	2	23	3	24	2	.....	.....	30
18	5	205	3	22	....	20	2	3	....	31	4	30	5	14	1	21	1	20	1	.....	.....	31
24	4	152	7	29	1	15	2	2	....	32	1	23	3	11	....	27	2	22	2	.....	.....	32
13	2	97	4	13	1	13	....	1	....	11	....	32	1	3	2	12	1	12	1	.....	.....	33
12	....	72	3	13	....	6	1	2	....	15	1	23	....	6	2	13	....	9	1	.....	.....	34
11	1	47	2	4	....	8	....	2	....	5	....	14	....	6	....	9	....	9	....	.....	.....	35
8	....	36	2	4	....	2	1	1	....	7	....	14	2	4	....	4	....	4	....	.....	.....	36
9	....	24	1	3	....	5	....	1	....	4	....	7	....	3	....	5	....	5	1	.....	.....	37

Table 52 — STATE OF NEW YORK (exclusive of New York City): *Marriages by conjuga*
country of birth:

Line number	CONJUGAL CONDITION; MONTH OF MARRIAGE; RELATIVE AGES	TOTAL		WHITE									
										COUNTRY			
				TOTAL WHITE		UNITED STATES		FOREIGN BORN TOTAL		England, Scotland and Wales		Ireland	
		Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
	Excess Age — (*Concl'd*)												
38	16 years older..........	240	15	232	15	183	12	49	3	7	......	4	..
39	17 years older..........	195	15	189	15	148	15	41	......	2	......	4	..
40	18 years older..........	160	12	158	12	135	9	23	3	1	1	1	.
41	19 years older..........	119	7	118	6	96	2	22	4	2	......	4	..
42	20 years older..........	107	6	102	6	91	5	11	1	2	......	1	...
43	21 years older..........	84	2	83	2	68	2	15	......	3	......	3	..
44	22 years older..........	78	6	78	6	66	6	12	......	1	......	2	....
45	23 years older..........	57	1	57	1	50	1	7	......	1	......	1	....
46	24 years older..........	58	1	56	1	50	......	6	1	1	1	1	...
47	25 years older or more...	202	4	197	4	169	3	28	1	6	......	1	..
48	Not stated............	4	4	4	4	1	3	3	1	1	......	1	..

condition, month of marriage and relative ages of brides and grooms according to color and **1920 — (Concluded)**

BRIDES																						
OF BIRTH																		Total colored		Nativity not stated		Line number
Germany (includes German Poland)		Italy		Russia (includes Russian Poland)		Austria (includes Austrian Poland)		Hungary		Poland (not specified)		Canada		Norway, Sweden, Denmark		Other foreign born						
Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	
3	....	11	3	3	....	1	....	....	....	5	....	10	....	2	....	3	....	8	....	.....	.....	38
7	....	8	....	....	....	2	....	....	....	2	....	9	....	1	....	6	....	6	....	.....	.....	39
4	....	6	1	....	....	1	....	1	....	....	....	5	....	1	....	3	1	2	....	.....	.....	40
4	1	5	1	1	....	....	....	....	....	1	1	3	1	1	....	1	....	1	1	.....	.....	41
1	....	....	....	3	....	1	....	....	....	....	....	2	1	....	....	1	....	5	....	.....	.....	42
1	....	2	....	....	....	....	....	....	....	1	....	2	....	....	....	3	....	1	....	.....	.....	43
3	....	2	....	....	....	....	....	....	....	2	....	1	....	....	....	1	....	....	....	.....	.....	44
2	....	....	....	....	....	....	....	....	....	....	....	2	....	1	....	....	....	....	....	.....	.....	45
....	....	1	....	....	....	....	....	....	....	....	....	1	....	1	....	1	....	2	....	.....	.....	46
8	....	....	....	1	....	....	....	....	....	2	....	7	1	1	....	2	....	5	....	.....	.....	47
1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	48

Table 53 — STATE OF NEW YORK (exclusive of New York City): *Marriages*

Line number	AGE AT MARRIAGE	All Marriages		White									
										Country			
				Total White		United States		Total Foreign Born		England, Scotland and Wales		Ireland	
		Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
1	**Total—All ages**	48,421	48,421	47,854	47,862	39,496	41,266	8,357	6,593	745	659	377	462
2	10 years	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	11 years	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	12 years	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	13 years	.....	4	.....	4	.....	3	.....	1	.....	.....	.....	.....
6	14 years	.....	21	.....	21	.....	18	.....	3	.....	.....	.....	.....
7	15 years	.....	157	.....	155	.....	130	.....	25	.....	.....	.....	.....
8	16 years	13	687	13	682	13	577	.....	105	.....	3	.....	1
9	17 years	61	1,484	60	1,474	58	1,278	2	196	1	6	.....	.....
10	18 years	331	4,849	329	4,805	322	4,290	7	515	2	35	.....	3
11	19 years	742	4,433	740	4,383	693	3,900	47	483	4	37	2	5
12	20 years	1,015	3,955	1,011	3,904	944	3,475	67	428	8	32	4	5
13	21 years	5,171	4,312	5,121	4,277	4,759	3,824	362	453	46	47	3	11
14	22 years	4,185	3,732	4,136	3,690	3,702	3,245	434	444	45	41	5	17
15	23 years	4,127	3,411	4,089	3,372	3,503	2,950	586	422	32	32	7	31
16	24 years	4,128	3,021	4,085	2,994	3,429	2,600	656	394	31	31	12	21
17	25 years	3,680	2,540	3,650	2,517	2,986	2,197	664	320	38	34	13	31
18	26 years	3,319	2,117	3,286	2,090	2,619	1,811	667	279	37	26	18	30
19	27 years	2,758	1,798	2,730	1,775	2,186	1,495	544	280	32	37	17	31
20	28 years	2,504	1,513	2,467	1,493	1,902	1,250	565	243	50	23	23	35
21	29 years	1,911	1,212	1,894	1,197	1,486	1,038	407	159	37	23	14	21
22	30 years	1,692	1,106	1,679	1,079	1,274	881	405	198	39	25	29	26
23	31 years	1,237	708	1,228	699	953	591	275	108	29	12	14	14
24	32 years	1,304	737	1,283	724	963	563	320	161	23	20	15	16
25	33 years	989	560	973	554	747	448	226	106	21	13	9	12
26	34 years	923	564	910	555	701	441	209	114	23	13	15	17
27	35 years	803	554	785	552	571	424	214	128	25	23	16	21
28	36 years	654	449	640	440	491	347	149	93	15	11	13	10
29	37 years	566	347	552	341	402	281	150	60	9	6	14	9
30	38 years	625	430	613	418	451	325	162	93	19	13	12	17
31	39 years	471	356	462	349	350	277	112	72	13	16	13	6
32	40 years	445	368	432	358	322	271	110	87	13	8	15	10
33	41 years	346	202	337	202	262	165	75	37	14	9	12	3
34	42 years	353	268	349	262	263	197	86	65	6	5	11	10
35	43 years	313	188	304	184	257	137	47	47	6	2	2	5
36	44 years	265	204	260	203	206	161	54	42	9	5	1	4
37	45 years	319	260	312	257	247	200	65	57	8	12	13	5
38	46 years	219	152	214	151	165	124	49	27	5	6	5	1
39	47 years	243	166	233	162	176	115	57	47	9	8	5	6
40	48 years	229	195	227	192	180	150	47	42	10	5	2	4
41	49 years	187	134	182	134	147	111	35	23	5	4	5	5
42	50 years	242	148	240	145	174	117	66	28	7	2	5	1
43	51 years	152	93	151	93	113	80	38	13	7	3	4	1
44	52 years	184	129	182	127	148	105	34	22	4	.....	5	.....
45	53 years	143	81	141	81	112	68	29	13	4	3	4	1
46	54 years	161	88	158	88	112	68	46	20	4	4	5	1
47	55 years	131	95	129	93	99	70	30	23	4	5	1	.....
48	56 years	125	73	122	71	98	52	24	19	5	1	2	2
49	57 years	118	60	118	59	89	42	29	17	3	2	2	.....
50	58 years	138	68	135	68	107	50	28	18	4	3	1	3
51	59 years	86	46	86	46	65	37	21	9	7	2	.....	.....

***by age of brides and grooms according to color and country of birth:* 1920**

BRIDE

OF BIRTH OF FOREIGN BORN

Germany (includes German Poland)		Italy		Russia (includes Russian Poland)		Austria (includes Austrian Poland)		Hungary		Poland (not specified)		Canada		Norway, Sweden, Denmark		Other foreign countries		Total colored		Nativity not stated		Line number
Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	
504	**407**	**3017**	**2004**	**738**	**507**	**429**	**475**	**68**	**77**	**780**	**565**	**907**	**887**	**266**	**202**	**526**	**348**	**567**	**559**	**1**	**3**	**1**
....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3
....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4
....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5
....	..	....	2	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	6
....	..	....	21	....	....	....	....	....	....	....	....	....	1	....	....	....	3	....	2	....	....	7
....	..	....	82	....	....	....	1	....	1	....	6	....	6	....	1	....	4	....	5	....	....	8
....	3	1	132	....	6	....	10	....	1	....	18	....	11	....	3	....	6	1	10	....	....	9
....	19	3	281	....	25	1	23	....	5	....	37	1	50	....	6	....	31	2	44	....	....	10
....	19	19	223	3	32	4	35	....	4	2	33	10	58	....	8	3	29	2	50	....	....	11
3	17	28	185	7	40	2	27	1	7	4	27	10	45	....	15	....	28	4	51	....	1	12
1[illegible]	17	148	165	14	50	13	37	5	8	21	35	61	60	18	7	19	16	50	35	....	....	13
11	25	185	147	37	54	23	33	5	3	35	47	48	43	11	7	29	27	49	42	....	1	14
15	12	304	117	50	48	25	43	8	5	40	43	52	47	10	14	34	30	38	39	....	....	15
11	14	309	96	64	50	34	43	3	4	78	51	60	56	10	11	44	23	43	27	....	....	16
12	10	321	70	78	29	32	23	7	7	74	39	41	47	13	9	35	21	30	23	....	....	17
17	13	290	59	72	29	33	16	1	....	91	24	41	43	21	10	31	20	33	27	....	....	18
17	9	241	69	64	18	32	23	1	7	52	25	40	42	15	6	33	13	28	23	....	....	19
25	20	209	49	53	23	33	20	3	2	68	19	46	36	19	4	36	12	37	20	....	....	20
23	11	126	31	50	9	20	12	4	....	45	14	38	22	8	9	42	7	17	15	1	....	21
27	8	153	38	35	13	20	16	5	3	33	17	36	34	6	6	22	12	13	27	....	....	22
1[illegible]	9	98	18	26	5	10	6	2	1	28	12	20	20	7	4	23	7	9	9	....	....	23
22	17	119	24	30	14	16	8	1	3	25	15	33	29	13	7	23	8	21	13	....	....	24
1[illegible]	14	69	13	24	4	15	18	3	1	12	9	25	14	12	5	19	3	16	6	....	....	25
14	7	54	18	19	5	16	10	2	2	20	11	26	26	11	3	9	2	13	9	....	....	26
16	12	61	12	20	11	13	8	1	2	24	12	17	16	9	6	12	5	18	2	....	....	27
18	9	42	20	12	4	10	7	1	....	6	11	19	17	5	3	8	1	14	9	....	....	28
14	4	36	6	10	2	14	2	2	3	14	4	18	11	6	8	13	5	14	6	....	....	29
13	4	31	16	13	1	11	9	1	1	18	4	22	16	5	5	17	7	12	12	....	....	30
15	11	21	8	6	4	10	4	1	1	12	4	11	11	8	4	2	3	9	7	....	....	31
10	8	9	18	4	5	4	6	....	1	6	7	27	16	6	4	16	4	13	10	....	....	32
4	4	11	4	8	1	2	3	1	....	3	1	17	7	3	4	....	1	9	....	....	....	33
14	11	23	9	5	5	2	1	1	....	6	5	11	11	5	7	2	1	4	6	....	....	34
7	7	7	8	....	....	2	7	....	1	5	2	12	8	4	3	2	4	9	4	....	....	35
8	6	7	8	2	....	1	4	3	....	5	1	8	12	4	1	6	1	5	1	....	....	36
7	6	10	8	1	3	2	3	1	....	7	6	11	7	2	3	3	4	7	3	....	....	37
7	2	12	3	1	....	3	2	....	1	5	3	5	3	2	3	4	3	5	1	....	....	38
1	8	9	6	3	2	4	3	1	....	8	2	13	11	3	1	1	....	10	4	....	....	39
6	6	5	5	5	2	4	2	2	2	3	5	7	7	2	4	1	....	2	3	....	....	40
2	5	2	1	1	1	1	....	....	....	2	2	9	3	4	2	4	....	5	....	....	....	41
22	6	8	8	....	1	6	2	....	....	1	1	11	5	4	....	2	2	2	3	....	....	42
5	4	4	....	2	....	3	1	....	....	1	1	5	2	2	1	5	....	1	....	....	....	43
4	6	3	3	1	....	1	2	....	1	2	3	9	5	3	1	2	1	2	2	....	....	44
4	4	5	3	1	....	1	....	....	....	2	....	6	1	1	....	1	1	2	....	....	....	45
8	5	4	3	....	2	1	2	....	....	4	2	14	....	3	....	3	1	3	....	....	....	46
9	5	4	3	3	2	1	3	....	....	1	1	3	4	1	....	3	....	2	2	....	....	47
5	4	2	4	1	1	....	....	....	....	1	2	6	5	1	....	1	....	3	2	....	....	48
7	3	2	2	2	1	2	....	....	....	....	....	8	8	1	1	2	....	....	1	....	....	49
6	6	1	....	4	2	....	....	1	....	1	....	8	....	1	3	1	1	3	....	....	....	50
8	3	1	1	....	....	....	....	....	....	....	....	5	2	....	1	....	....	....	....	....	....	51

Table 53 — STATE OF NEW YORK (exclusive of New York City): *Marriages by*

Line number	AGE AT MARRIAGE	ALL MARRIAGES		WHITE									
				TOTAL WHITE		UNITED STATES		TOTAL FOREIGN BORN		COUNTRY			
										England, Scotland and Wales		Ireland	
		Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
52	60 years	141	86	140	85	110	71	30	14	4	3	2	1
53	61 years	66	24	66	24	47	19	19	5	5	.....	3	.....
54	62 years	79	44	79	44	61	35	18	9	4	2	.....	.....
55	63 years	68	35	68	35	55	33	13	2	2	.....	.....	.....
56	64 years	58	31	57	29	50	24	7	4	.....	2	.....	.....
57	65 years	70	32	70	31	58	23	12	8	1	3	.....	.....
58	66 years	50	19	48	19	38	15	10	4	2	.....	.....	.....
59	67 years	40	11	40	11	30	11	10	.....	3	.....	1	.....
60	68 years	42	14	41	14	35	12	6	2	3	.....	1	.....
61	69 years	26	10	25	10	22	10	3	.....	.....	.....	.....	.....
62	70 years	36	11	35	11	30	9	5	2	1	.....	.....	.....
63	71 years	12	7	12	7	9	6	3	1	1	.....	.....	.....
64	72 years	24	6	24	6	18	5	6	1	3	1	.....	.....
65	73 years	27	.....	27	.....	25	.....	2	.....	.....	.....	.....	.....
66	74 years	17	2	17	2	12	2	5	.....	1	.....	1	.....
67	75 years	11	7	11	7	11	7	.....	.....	.....	.....	.....	.....
68	76 years	13	2	13	2	11	2	2	.....	1	.....	.....	.....
69	77 years	5	1	5	1	5	1	.....	.....	.....	.....	.....	.....
70	78 years	3	1	3	1	3	.....	.....	1	.....	.....	.....	.....
71	79 years	7	.....	7	.....	6	.....	1	.....	.....	.....	.....	.....
72	80 years or over	15	1	15	1	12	1	3	.....	1	.....	.....	.....
73	Age not stated	3	2	3	2	1	1	2	1	.....	.....	1	.....

age of brides and grooms according to color and country of birth: **1920 — (Concluded)**

BRIDES																						
OF BIRTH OF FOREIGN BORN																		Total colored		Nativity not stated		
Germany (includes German Poland)		Italy		Russia (includes Russian Poland)		Austria (includes Austrian Poland)		Hungary		Poland (not specified)		Canada		Norway, Sweden, Denmark		Other foreign countries						
Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Line number
10	2	2	2	2	1	2	....	....	....	2	2	4	3	1	....	1	....	1	1	....	....	52
5	3	2	1	1	....	....	....	....	....	....	....	1	1	....	....	2	....	....	....	....	....	53
3	2	1	1	1	....	....	....	....	....	2	1	5	2	1	1	1	....	....	....	....	....	54
4	....	1	1	....	....	....	....	1	....	....	....	4	....	1	1	....	....	....	....	....	....	55
3	....	....	....	1	....	....	....	....	....	....	1	3	1	....	....	....	....	1	2	....	1	56
5	3	1	....	....	....	....	....	....	....	....	....	4	2	....	....	1	....	....	1	....	....	57
1	1	1	....	....	1	....	....	....	....	2	....	3	1	....	....	1	1	2	....	....	....	58
2	....	....	....	....	....	....	....	....	....	....	....	2	....	1	....	1	....	....	....	....	....	59
....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	2	....	1	....	....	....	60
1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	1	....	....	....	61
....	2	2	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	62
....	....	....	....	....	....	....	....	....	....	....	....	2	1	....	....	....	....	....	....	....	....	63
....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	1	....	....	....	....	....	64
....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	65
2	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	66
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	67
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	68
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	69
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	70
....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	71
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	72
1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	73

Table 54 — STATE OF NEW YORK (exclusive of New York City): *First marriages: age of*

Line Number	AGE AT MARRIAGE	TOTAL		TOTAL WHITE		NATIVE		TOTAL FOREIGN BORN		NATIVITY OF COUNTRY			
										England, Scotland and Wales		Ireland	
		Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
1	Total—All ages	42,025	42,218	41,565	41,775	34,651	36,536	6,913	5,237	586	525	290	395
2	10 years	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	11 years	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	12 years	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	13 years	.....	4	.....	4	.....	3	.....	1	.....	.....	.....	.....
6	14 years	.....	21	.....	21	.....	18	.....	3	.....	.....	.....	
7	15 years	.....	155	.....	153	.....	128	.....	25	.....	.....	.....	.....
8	16 years	13	682	13	677	13	573	.....	104	.....	3	.....	1
9	17 years	61	1,478	60	1,468	58	1,273	2	195	1	6	.....	.....
10	18 years	331	4,817	329	4,773	322	4,264	7	509	2	35	.....	3
11	19 years	739	4,382	737	4,335	691	3,858	46	477	4	37	2	3
12	20 years	1,011	3,894	1,007	3,844	941	3,422	66	421	7	32	4	5
13	21 years	5,148	4,231	5,098	4,198	4,738	3,760	360	438	46	46	3	11
14	22 years	4,146	3,616	4,097	3,575	3,668	3,146	429	428	44	39	5	17
15	23 years	4,070	3,239	4,036	3,202	3,459	2,814	577	388	32	31	7	[illegible]
16	24 years	4,050	2,833	4,008	2,809	3,360	2,448	648	361	31	31	12	21
17	25 years	3,586	2,346	3,558	2,325	2,906	2,050	652	275	38	31	13	[illegible]
18	26 years	3,180	1,894	3,149	1,875	2,509	1,634	640	241	34	24	17	35
19	27 years	2,599	1,575	2,574	1,56[illegible]	2,050	1,334	524	226	31	35	15	31
20	28 years	2,309	1,281	2,275	1,265	1,751	1,075	524	190	48	20	23	33
21	29 years	1,721	984	1,705	974	1,347	864	357	110	31	17	12	15
22	30 years	1,517	852	1,506	834	1,136	697	370	137	36	14	29	25
23	31 years	1,062	524	1,057	517	815	447	242	70	27	11	14	14
24	32 years	1,094	519	1,078	512	813	408	265	104	18	16	12	16
25	33 years	782	358	771	354	591	292	180	62	20	9	9	[illegible]
26	34 years	704	373	693	365	533	302	160	63	21	11	14	12
27	35 years	588	318	575	316	417	255	158	61	18	13	15	19
28	36 years	440	270	429	265	330	210	99	55	12	10	11	[illegible]
29	37 years	375	193	364	191	274	167	90	24	6	4	9	6
30	38 years	390	232	382	229	283	181	99	48	13	10	8	11
31	39 years	287	158	284	155	222	126	62	29	9	7	10	5
32	40 years	270	178	263	175	201	129	62	46	8	7	10	[illegible]
33	41 years	202	100	195	100	147	85	48	15	10	5	11	
34	42 years	180	109	177	107	137	80	40	27	2	2	8	4
35	43 years	173	76	165	75	138	58	27	17	5	.....	2	3
36	44 years	130	72	127	72	108	64	19	8	5	1	1	1
37	45 years	133	81	131	81	104	61	27	20	4	5	9	3
38	46 years	91	48	90	48	74	43	16	5	2	1	1	1
39	47 years	105	53	101	52	82	40	19	12	3	1	5	4
40	48 years	76	46	75	46	63	36	12	10	3	1	.....	3
41	49 years	63	31	61	31	52	25	9	6	1	2	1	1
42	50 years	74	26	74	26	59	25	15	1	2	1	2	
43	51 years	50	22	49	22	40	18	9	4	2	2	1	
44	52 years	47	24	47	24	39	21	8	3	2	.....	2	
45	53 years	32	21	32	21	25	20	7	1	2	1	.....	
46	54 years	39	10	39	10	27	10	12	.....	1	.....	.....	
47	55 years	26	19	26	18	23	15	3	3	.....	1	.....	
48	56 years	20	10	19	9	15	9	4	.....	1	.....	.....	
49	57 years	17	12	17	12	14	8	3	4	.....	.....	.....	.....
50	58 years	21	9	21	9	20	7	1	2	1	.....	.....	1
51	59 years	11	9	11	9	6	8	5	1	2	.....	.....	

brides and grooms contracting first marriage according to color and country of birth: **1920**

WHITE BRIDES AND GROOMS

OF BIRTH OF FOREIGN BORN

Germany (includes German Poland)		Italy		Russia (includes Russian Poland)		Austria (includes Austrian Poland)		Hungary		Poland (not speci-fied)		Canada		Norway Sweden, Den-mark		Other foreign countries		Total colored		Nativity not stated		Line Number
Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	
324	264	2711	1710	640	415	334	333	50	53	638	398	674	690	213	158	444	296	460	443	1	2	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	4
....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	.....	.....	5
....	....	....	2	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	.....	.....	6
....	....	....	21	....	....	....	....	....	....	....	....	....	1	....	....	....	3	....	2	.....	.....	7
....	....	....	81	....	....	....	1	....	1	....	6	....	6	....	1	....	4	....	5	.....	.....	8
....	3	1	131	....	6	....	10	....	1	....	18	....	11	....	3	....	6	1	10	.....	.....	9
....	19	3	276	....	25	1	23	....	5	....	37	1	49	....	6	....	31	2	44	.....	.....	10
....	19	19	221	3	31	4	34	....	3	2	33	9	57	....	8	3	29	2	47	.....	.....	11
3	17	28	180	7	40	2	27	1	7	4	27	10	43	....	15	....	28	4	50	.....	1	12
14	16	147	160	14	48	13	37	5	8	20	34	61	58	18	7	19	13	50	33	.....	.....	13
11	24	183	142	37	53	23	30	5	3	35	47	48	42	10	7	28	24	49	41	.....	1	14
15	12	298	106	49	41	25	40	8	3	47	40	52	45	10	14	34	26	34	37	.....	.....	15
11	13	305	85	64	46	34	37	3	4	77	45	57	47	10	11	44	21	42	24	.....	.....	16
12	10	318	54	77	25	30	17	7	5	72	31	38	47	13	8	34	18	28	21	.....	.....	17
17	12	287	45	69	28	31	9	1	....	87	17	42	39	24	10	31	19	31	19	.....	.....	18
17	7	231	52	63	13	30	15	1	6	49	15	30	33	15	6	33	13	25	15	.....	.....	19
21	20	193	35	50	18	29	10	1	2	61	9	45	31	19	3	34	9	34	16	.....	.....	20
17	8	115	20	45	4	16	7	3	....	40	6	34	14	7	9	37	7	16	10	1	.....	21
25	7	137	24	35	8	17	7	5	2	27	9	34	26	5	6	20	9	11	18	.....	.....	22
15	7	84	6	25	4	9	2	2	....	22	3	16	14	5	3	23	6	6	7	.....	.....	23
21	14	101	12	26	10	14	3	....	2	18	5	23	17	12	4	20	5	16	7	.....	.....	24
12	10	54	7	19	2	11	6	1	....	8	1	20	10	12	5	14	3	11	4	.....	.....	25
14	3	45	8	12	3	7	3	1	....	12	6	19	14	8	3	7	....	11	8	.....	.....	26
12	8	43	4	14	2	11	3	....	....	16	....	15	6	6	3	5	3	13	2	.....	.....	27
11	6	28	12	4	1	7	2	1	....	3	3	12	12	3	1	7	1	11	5	.....	.....	28
8	....	23	1	5	1	6	....	1	1	7	....	10	4	4	5	11	2	11	2	.....	.....	29
10	1	15	5	6	....	4	3	....	....	10	....	17	10	3	3	13	5	8	3	.....	.....	30
8	5	7	3	4	....	4	....	....	....	5	....	7	6	6	3	2	....	3	3	.....	.....	31
6	4	3	6	3	2	2	1	....	....	2	3	14	10	5	3	9	3	7	3	.....	.....	32
2	1	6	1	3	....	1	1	1	....	1	....	11	5	2	1	....	1	7	....	.....	.....	33
8	4	10	2	1	2	2	1	....	....	2	1	5	7	1	3	1	1	3	2	.....	.....	34
3	3	5	2	....	....	....	1	....	....	3	....	5	3	2	2	2	3	8	1	.....	.....	35
6	1	....	1	....	....	....	1	....	....	1	....	2	3	1	....	3	....	3	....	.....	.....	36
3	2	3	2	....	1	....	1	1	....	1	1	3	3	1	1	2	1	2	....	.....	.....	37
2	....	3	....	....	....	....	....	....	....	2	1	4	....	1	1	1	1	1	....	..		38
....	....	4	2	1	1	....	....	1	....	1	....	2	4	2	....	....	....	4	1	.....	.....	39
2	1	1	..	1	..	....	....	1	....	....	....	3	3	1	2	....	....	1	....	.....	.....	40
1	2	1	....	....	....	1	....	....	....	....	....	3	1	....	....	1	....	2	....	.....	.....	41
5	....	1	....	....	....	....	....	....	....	....	....	2	....	2	....	1	....	....	....	.....	.....	42
1	....	2	..	1	....	....	....	....	....	....	....	....	1	1	1	1	....	1	....	.....	.....	43
....	2	1	....	....	....	....	1	....	....	....	....	1	....	2	....	....	....	....	....	.....	.....	44
1	....	2	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	.....	.....	45
2	....	2	....	....	....	....	....	....	....	2	....	4	....	1	....	....	....	....	....	.....	.....	46
1	1	1	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	1	.....	.....	47
1	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	1	.....	.....	48
1	....	....	....	....	....	....	....	....	....	....	....	1	4	1	....	....	....	....	....	.....	.....	49
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	.....	.....	50
2	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	.....	.....	51

Table 54 — STATE OF NEW YORK (exclusive of New York City): *First marriages: ages of bride*

Line number	AGE AT MARRIAGE	TOTAL		TOTAL WHITE		NATIVE		TOTAL FOREIGN BORN		NATIVITY OF COUNTRY			
										England, Scotland and Wales		Ireland	
		Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides
52	60 years	15	9	14	9	12	7	2	2	......	......	......	1
53	61 years	6	3	6	3	5	3	1	......	......	......	......	......
54	62 years	5	6	5	6	4	3	1	3	1	2	......	......
55	63 years	8	1	8	1	8	1	......	......	......	......	......	......
56	64 years	6	3	6	2	5	......	1	2	......	1	......	......
57	65 years	7	3	7	3	6	3	1	......	......	......	......	......
58	66 years	......	2	......	2	......	2	......	......	......	......	......	......
59	67 years	2	1	2	1	2	1	......	......	......	......	......	......
60	68 years	3	1	3	1	2	1	1	......	......	......	1	......
61	69 years	1	1	1	1	1	1	......	......	......	......	......	......
62	70 years	2	......	2	......	1	......	1	......	......	......	......	......
63	71 years	1	1	1	1	1	1	......	......	......	......	......	......
64	72 years	2	1	2	1	2	1	......	......	......	......	......	......
65	73 years	......	......	......	......	......	......	......	......	......	......	......	......
66	74 years	......	......	......	......	......	......	......	......	......	......	......	......
67	75 years	......	......	......	......	......	......	......	......	......	......	......	......
68	76 years	......	......	......	......	......	......	......	......	......	......	......	......
69	77 years	......	......	......	......	......	......	......	......	......	......	......	......
70	78 years	......	......	......	......	......	......	......	......	......	......	......	......
71	79 years	......	......	......	......	......	......	......	......	......	......	......	......
72	80 years and over	1	......	1	......	1	......	......	......	......	......	......	......
73	Age not stated	2	1	2	1	......	1	2	......	......	......	1	......

and grooms contracting first marriage according to color and country of birth: **1920 — (Concl'd)**

WHITE BRIDES AND GROOMS																						
OF BIRTH OF FOREIGN BORN																		Total colored		Nativity not stated		
Germany (includes German Poland)		Italy		Russia (includes Russian Poland)		Austria (includes Austrian Poland)		Hungary		Poland (not specified)		Canada		Norway, Sweden, Denmark		Other foreign countries						
Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Grooms	Brides	Line number
....	....	....	1	....	....	....	....	....	....	1	....	1	....	....	....	....	....	1	....	....	....	52
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	53
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	54
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1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	57
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....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	67
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	68
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	69
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....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	72
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	73

Table 55 — STATE OF NEW YORK (exclusive of New York City): *Marriages of divorcees*

Line number	STATE OR COUNTRY IN WHICH DIVORCE WAS GRANTED		Total	YEAR IN WHICH													
				1880	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	189
1	**Total**	Grooms	1,163	1	2	1	....	....	1	2	1	1	1	4	....	....	1
		Brides	1,390	....	1	1	....	1	1	....	1	1	3	....	2	2	3
2	**New York**	Grooms	544	1	....	....	....	....	....	1	....	1	1	1	....	....	1
		Brides	803	....	....	1	....	1	....	....	1	1	....	....	1	1	1
3	Alabama	Grooms	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4	Arizona	Grooms	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5	Arkansas	Grooms	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
6	California	Grooms	14	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....
7	Colorado	Grooms	9	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
8	Connecticut	Grooms	35	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	27	....	....	....	....	....	....	....	....	....	....	....	....	....	....
9	Delaware	Grooms	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....
10	Florida	Grooms	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	8	....	....	....	....	....	....	....	....	....	1	....	....	....	....
11	Georgia	Grooms	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
12	Idaho	Grooms	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....
13	Illinois	Grooms	23	....	1	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	22	....	....	....	....	....	....	....	....	....	....	....	....	....	....
14	Indiana	Grooms	14	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....
15	Iowa	Grooms	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
16	Kansas	Grooms	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
17	Kentucky	Grooms	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	Louisiana	Grooms	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
19	Maine	Grooms	8	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
20	Maryland	Grooms	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....
21	Massachusetts	Grooms	37	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	54	....	....	....	....	....	....	....	....	....	....	....	....	....	....
22	Michigan	Grooms	35	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	33	....	....	....	....	....	....	....	....	....	....	....	....	1	....
23	Minnesota	Grooms	6	....	....	....	....	....	....	....	....	....	....	1	....	....	....
		Brides	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
24	Mississippi	Grooms	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
25	Missouri	Grooms	8	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....
26	Montana	Grooms	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	5	....	1	....	....	....	....	....	....	....	....	....	....	....	....
27	Nebraska	Grooms	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....
		Brides	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Place in which divorce was granted according to the year in which it was granted: **1920**

DIVORCE WAS GRANTED

1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	Not stated	Line number
2	1	6	4	5	6	7	10	9	7	18	26	26	21	41	50	53	85	96	251	383	41	1
3	2	4	6	5	7	6	6	11	12	15	13	25	29	43	70	65	92	131	301	490	38	
2	1	3	1	2	2	4	3	5	3	6	9	10	14	22	21	18	36	37	115	201	23	2
1	1	1	3	3	5	4	4	1	6	8	8	13	16	26	38	42	48	62	184	299	23	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	3
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....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
....	....	....	....	....	....	1	....	....	....	2	....	....	....	2	1	1	1	1	2	3	....	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	1	....	....	1	1	....	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	4	....	2	....	7
....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	1	....	
....	....	....	....	....	....	....	....	....	....	1	1	2	1	....	1	1	2	2	6	14	4	8
....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	1	5	1	6	11	1	
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....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	1	....	4	....	
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....	....	....	....	1	1	....	2	1	....	....	....	....	....	1	....	2	2	1	4	7	....	13
....	....	....	....	....	....	....	....	1	....	1	....	....	1	1	2	2	....	5	3	6	....	
....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	5	1	....	1	3	3	....	14
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	
....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	1	....	1	1	15
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....	....	1	1	....	....	....	....	2	....	....	....	1	1	2	3	1	6	9	12	15	....	
....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	1	1	4	8	8	9	2	22
....	....	....	....	....	....	....	....	1	....	....	1	....	1	2	4	3	3	4	5	8	....	
....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	1	....	....	2	....	....	23
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1	
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....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	1	
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....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	1	2	1	1	....	
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Table 55 — STATE OF NEW YORK (exclusive of New York City): *Marriages of divorcees:*

Line number	STATE OR COUNTRY IN WHICH DIVORCE WAS GRANTED		Total	YEAR IN WHICH													
				1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899
28	Nevada	Grooms	20														
		Brides	13														
29	New Hampshire	Grooms	5														
		Brides	5														
30	New Jersey	Grooms	23						1								
		Brides	11										1				
31	New Mexico	Grooms															
		Brides															
32	North Carolina	Grooms	3														
		Brides															
33	North Dakota	Grooms	2														
		Brides															
34	Ohio	Grooms	69								1						
		Brides	64														
35	Oklahoma	Grooms	2											1			
		Brides	2														
36	Oregon	Grooms	5														
		Brides	2														
37	Pennsylvania	Grooms	185		1	1				1				1			
		Brides	213						1								1
38	Rhode Island	Grooms	6														
		Brides	9														
39	South Carolina	Grooms															
		Brides	1														
40	South Dakota	Grooms	4														
		Brides	1														
41	Tennessee	Grooms	2														
		Brides	4														
42	Texas	Grooms	13														
		Brides	3														
43	Utah	Grooms	1														
		Brides															
44	Vermont	Grooms	18														
		Brides	17														
45	Virginia	Grooms	6														
		Brides	5														
46	Washington	Grooms	5														
		Brides	5														
47	West Virginia	Grooms															
		Brides	1														
48	Wisconsin	Grooms	9														
		Brides	3														
49	Wyoming	Grooms	3														
		Brides															
50	District of Columbia	Grooms															
		Brides															
51	Panama Canal Zone	Grooms															
		Brides															
52	Other U. S. Territory	Grooms															
		Brides															
53	Foreign Country	Grooms	8														
		Brides	8										1		1		
54	Place not stated	Grooms	8														
		Brides	17														

Place in which divorce was granted according to the year in which it was granted: **1920** — (Concl'd

DIVORCE WAS GRANTED																						
1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	Not stated	Line number
....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	2	4	2	10	....	28
....	....	....	....	....	....	....	....	....	....	....	....	2	1	....	....	....	1	2	3	4	....	
....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	1	1	....	1	....	....	29
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	2	....	
....	....	1	....	....	....	....	....	....	1	1	1	2	....	....	....	2	2	....	4	8	....	30
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	3	2	3	1	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	31
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	2	....	32
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
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....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
....	....	1	....	1	....	....	....	....	....	2	3	1	....	....	3	2	7	7	14	24	3	34
1	....	1	....	....	....	....	....	....	....	....	1	1	2	1	4	2	4	5	17	23	2	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	35
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	
....	....	....	....	....	....	....	....	....	....	....	1	....	1	1	....	....	1	....	1	....	....	36
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	
....	....	....	1	1	....	1	2	1	1	1	2	2	2	8	6	8	17	15	47	64	2	37
1	1	....	1	1	....	....	....	4	1	4	3	5	4	5	8	8	11	28	40	83	2	
....	....	....	....	....	....	....	....	1	....	....	1	....	....	1	1	....	....	....	1	1	....	38
....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	1	2	....	1	1	2	....	
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	39
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Legislative Document (1922) No. 28

STATE OF NEW YORK

ANNUAL REPORT

OF

THE INDUSTRIAL COMMISSIONER

FOR THE TWELVE MONTHS ENDED JUNE 30

1921

NEW YORK STATE DEPARTMENT OF LABOR

ALBANY
STATE DEPARTMENT OF LABOR
1922

ANNUAL REPORT OF THE INDUSTRIAL COMMISSIONER

STATE OF NEW YORK

DEPARTMENT OF LABOR

ALBANY, *January* 30, 1922

To the Legislature:

Pursuant to law, the annual report of The Industrial Commissioner for the year ended June 30, 1921, is herewith submitted.

Respectfully,

HENRY D. SAYER,
The Industrial Commissioner

C. A. MEEKER,
Secretary

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PART I

REPORT OF THE INDUSTRIAL COMMISSIONER

To the Legislature:

Herewith I beg to submit my report of the operations of the State Department of Labor for the fiscal year ended June 30, 1921, and include therewith various observations of the administration of the Department beyond that date. The tables and statistical matter all relate to the fiscal year. I shall not confine myself to that year alone, however, but will discuss details of administration that I deem important for you to know, down to the time of writing this report.

The reports of the various heads of bureaus made to me are included herewith for your information. The report of the State Insurance Fund, however, is not submitted at this time, but I beg leave to submit that to you at a later date, when the data for the report are all in hand. Following the custom of previous years, established by my predecessors, that report will be for the calendar year, ended December 31, 1921, instead of for the fiscal year ended June 30. By the terms of the Insurance Law, all insurance companies are required to report to the Superintendent of Insurance as of the close of the calendar year, and the report of the State Insurance Fund will thus be kept in comparable terms with other carriers of compensation insurance. I shall, however, submit certain observations in this report with regard to the State Fund.

RECODIFICATION AND REVISION OF LABOR LAW

The Legislature of 1920, by joint resolution, appointed a joint committee of the Senate and Assembly to study the Labor Law and to submit a plan for its recodification and revision. This committee met shortly after the close of the session of the Legislature and took up the task of preparing such a recodification. The need of a general recodification of the Labor Law had long been recognized. It had been recommended by the Factory Investigating Commission in 1913, and indeed a draft of a proposed recodification was in 1915 presented to the Legislature. The Labor Law had been amended in many respects, new sections added and old ones repealed or the language altered, so that there had come into existence ambiguous provisions and in some cases positively conflicting provisions, as well as obsolete sections. Therefore, it was at times difficult for the Department clearly to understand the intent of the law, not to mention the employers and workers of the State. Likewise, the statute contained many provisions of minute detail of organization, that might well be left to rule or regulation which would be more elastic and could be altered to meet varying conditions and changed circumstances.

The Joint Committee, commonly known as the Knight-Brady Committee, under the chairmanship of Senator John Knight, undertook first a rearrangement of the law to make it more orderly and readily understandable, and at the same time to clear up any ambiguities and inconsistencies, but without making any changes of substantive law. In doing so they followed the plan and general outline of the proposed Wagner recodification of 1915.

This recodification was printed by the committee and widely distributed and thereafter public hearings were held thereon.

During the course of its public hearings, the Knight-Brady Committee took up the matter of substantive changes in the law, and made rather extended inquiry into the matter of administrative methods in the Department and the workings of the administrative provisions of the old law.

While these inquiries were still going on, Governor Miller submitted to the Legislature of 1921 his first message in which he commented at some length on the administration of the Department of Labor as illustrating the extravagant and inefficient methods that were inherent in a commission form of administration, and, while not criticising the persons composing the commission, he did very strongly condemn the system.

It is needless for me to undertake to repeat the arguments urged by the Governor in his message. They are familiar to most of your members. The important part of his recommendation, in the interest of efficiency and economy and a better method of administration, was that the old commission, with its wide powers of administrative, judicial and legislative character, be supplanted by a new organization that would separate and keep separate the administrative responsibility from the judicial and legislative powers. He suggested that the administrative authority and responsibility be centered in a single commissioner, responsible to the Governor, and that the judicial work of passing upon claims for workmen's compensation and the legislative function of adopting rules and regulations to carry out and supplement the Labor Law be committed to a board of three members.

The Knight-Brady Committee adopted the plan outlined by the Governor, and bills were prepared to carry out his recommendations.

Question then arose as to whether such revisions in the administrative provisions of the Labor Law were to be contained in a separate bill or whether they should be included in the draft of the recodification. Believing that it would be wholly inconsistent for them to pass the recodification bill containing administrative provisions in which they did not believe and intended to change. and then pass a later amending act which would have been an awkward method of procedure, and likewise would have been confusing to people afterwards in that the Labor Law would not have been contained in a single act, the committee decided to incorporate the administrative changes in the recodification act. This aroused a storm of unjustifiable criticism and led to charges of bad faith. The committee not only did not act in bad faith but acted in a very proper and wise manner. The opposition to the bill on that ground did not seem to be offered in good faith, and the fears then expressed have been shown groundless.

Public hearings were held on the proposed measure. The recodification of the law not only was not criticized but was praised by all who examined it as being a very much simplified law, containing all the provisions of the old law, but reduced to simple language and arranged in a manner easy of understanding and in logical order.

Opposition to the reorganization, where it was not merely partisan, was confined chiefly to expressing fear that the elimination of many positions by title in the law, and the striking out of the minute details of organization of bureaus and divisions, and the centralizing of power completely to reorganize the Department in the hands of the Commissioner, would tend to weaken and break down the safeguards of the workers of the State. This opposition, if sincere, was founded upon a misconception and was groundless, as I believe will appear from the facts set forth hereinafter.

The recodification and reorganization bill was passed and became a law with the approval of the Governor on March 9, 1921.

REORGANIZATION

Following the enactment of the revised Labor Law, the Governor appointed, and the Senate confirmed, Henry D. Sayer, of Richmond Hill, Queens county, to be The Industrial Commissioner, and appointed as members of The Industrial Board, John D. Higgins, of Oswego, Chairman, for the term expiring January 1, 1927, T. V. O'Connor, of Buffalo, for the term expiring January 1, 1925, and Mrs. Rosalie Loew Whitney, of Brooklyn, for the term expiring January 1, 1923.

The Commissioner and all the members of The Industrial Board qualified and took the constitutional oath of office on April 15, 1921, and thereupon the former Industrial Commission under the law ceased to function.

The members of the Industrial Commission in office at the time of the reorganization and who had been in office for the entire previous part of the fiscal year were Edward F. Boyle, of New York, Chairman; James M. Lynch, of Syracuse; Henry D. Sayer, of Richmond Hill; Frances Perkins, of New York; and Cyrus W. Phillips, of Rochester, Commissioners.

Shortly after entering upon his duties as a member of the Board, Mr. O'Connor resigned to accept membership on the United States Shipping Board, under appointment of the President. To fill the vacancy caused by the resignation of Mr. O'Connor, the Governor appointed Richard H. Curran, of Rochester.

To be Deputy Commissioner, with full power to act as Commissioner in the absence or inability of the Commissioner to act, I appointed Martin H. Christopherson, of Yonkers, an engineer of expert knowledge, training and experience, and a former member of the Advisory Industrial Council. His wide experience in conducting industries under the New York law and elsewhere, his enthusiasm for safety engineering and accident prevention, and his well known attitude of fairness to the workers combined to make him an exceptionally well qualified man to aid me in the important work of the Department, and his willingness to serve in that capacity is a cause for congratulation to the State.

Upon assuming office I abolished the old positions of First, Second and Third Deputy Commissioners of the former Industrial Commission. There being a single statutory Deputy Commissioner, it seemed to me inconsistent and unnecessary to retain these positions. The incumbents of the positions were James L. Gernon, First Deputy; William C. Archer, Second Deputy; and Edward D. Jackson, Third Deputy.

To be heads of the various bureaus, I appointed James L. Gernon, of Brooklyn, former First Deputy Commissioner, to be Director of the Bureau of Inspection; Stanley L. Otis, of New York, an insurance actuary, and former chief examiner of insurance of the State of Michigan, who has written extensively on the subject of workmen's compensation, to be Director of the Bureau of Workmen's Compensation; and Seaman F. Northrup, of Watkins, Schuyler county, former county judge and one time district attorney, to be Director of the Bureau of Industrial Relations. Leonard W. Hatch, Manager of the State Insurance Fund, was retained in that position, and E. B. Patton, Chief Statistician of the Department, was likewise retained. Deputy Commissioner Christopherson was assigned to supervise the work of the Bureau of Research and Codes, in addition to his other duties in the Department.

Clarence A. Meeker, of Jefferson county, was appointed Secretary of the Department, and Mabel G. Merrill, of Queens county, private secretary to the Commissioner.

The work of the various bureaus will be discussed under their appropriate heads.

THE INDUSTRIAL BOARD

Immediately upon its organization the Industrial Board assumed responsibility for the judicial and legislative work of the Department. The immediate task was that of reviewing and hearing the constant stream of sharply contested compensation cases, which called for the decision of the Board rather than a referee.

At first, and for a short time, the Board sat together on compensation cases in order to acquire familiarity with the problems presented and to enable each to learn the points of view of the others. In learning their problem the Board also undertook the original hearing of some cases, instead of doing only review work.

In this manner they quickly sensed the practice and procedure and the problems with which they would have to deal.

Soon, however, in order to expedite the hearing of cases the Board divided up its compensation hearing work, and calendars were held before individual members, instead of the whole Board. Only in cases presenting novel points or exceptional difficulty on the facts or law, do claims come before the entire Board. The Board, however, is in frequent conference over cases.

One day a week is always reserved for formal meetings of the Board for the consideration of its business. On such days are brought before it appeals from orders of the Commissioner issued by him to employers or factory owners directing compliance with various provisions of the Labor Law, and also applications for variations from the provisions of the Labor Law or of the Industrial Code.

The Board has also considered for adoption various proposed new rules or modifications of existing rules of the Industrial Code. During the month of December the Board held public hearings on four proposed new rules, such hearings being held in Albany and New York, and in addition thereto in Buffalo, Rochester and Syracuse. The proposed rules that the Board has under consideration relate to the construction and arrangement of stairways and exits in factory buildings under six stories in height, the construction and arrangement of new mercantile establishments, the lighting of factories and the conduct of work in tunnels and in caissons under compressed air.

All sessions of the Board are open to the public and minutes are kept in which are recorded the votes of each member on all questions coming before the Board. The Secretary of the Department is designated to act as secretary of the Industrial Board and is responsible for the records of its meetings. Whenever matters are before the Board involving the administration of the Labor Law or the orders of the Commissioner, the Commissioner or Deputy Commissioner sits with the Board and takes part in its proceedings.

PRESENT ORGANIZATION OF DEPARTMENT

One of the principal objections voiced to the passage of the bill to reorganize the Department was that the bill eliminated the various specific statutory provisions for bureaus and divisions and left the Commissioner free to abolish entire bureaus if he saw fit, and thereby to weaken the administration of the law. In no other department of the State government that I am aware of is there any such statutory provision for bureaus and divisions as existed relating to the Department of Labor. In all such departments the responsible head of the department is expected to organize the department in such a manner as best to carry out the purposes for which it was created, within the limits of the appropriations made by the Legislature.

The objections made to the present law in regard to the Department of Labor, therefore, either proceeded from a misapprehension of the facts or from an unwillingness to entrust to the new head of the Department the same freedom of action as has heretofore been entrusted to other department heads.

In order, however, that there be no misunderstanding as to the organization of the Department and the powers and duties of the various bureaus and divisions, the Commissioner by general order issued effective July 1, 1921, set up in definite form the organization of the Department as it now exists. This order was known as General Order No. 21 and a copy of it is attached hereto and made a part hereof. (See Appendix 1.)

GENERAL ADMINISTRATION

Under this order, the general administration of the Department is exercised through the office of the Commissioner, the Deputy Commissioner being given full power and authority to act as Commissioner in the Commissioner's absence or inability to act, and in addition is given general direction and oversight of the work of the Bureau of Inspection, the Bureau of Research and Codes and the Bureau of Industrial Relations.

SECRETARY

The office of Secretary of the Department was established and the Secretary designated as custodian of the records and seal of the Department and assigned to act as secretary of the Industrial Board. The Divisions of Accounts and Cashier were placed under the supervision of the Secretary. He was given charge of the stockroom and all requisitions for supplies or printing were directed to be submitted through the Secretary's office. The care and maintenance of the building owned by the State and occupied by the Department in New York City was charged to the Secretary.

CHIEF STATISTICIAN

The former Bureau of Statistics was abolished as a separate and independent bureau, and the Chief Statistician was attached directly to General Administration under the direct supervision of the Commissioner. The functions of the Chief Statistician relate to the several bureaus of the Department and he is required to examine the records and files of them from time to time. As occasion may require the Commissioner may direct the Chief Statistician to examine the records of bureaus and submit statistical reports of their work. This function to my mind is clearly a staff function of the Commissioner, and can more readily and with less friction be so exercised if under the immediate direction of the Commissioner.

BULLETIN

The official bulletin of the Department was also placed under the administrative office.

ASSISTANTS TO COMMISSIONER

Under the former organization of the Department, offices of different bureaus in the same city, other than Albany or New York, were entirely independent of each other and their activities were in no way corelated. This was inherent in the system of a five-headed commission, each bureau being under the supervision of a different commissioner.

Shortly after my taking charge of the administration of the Department, I designated three Assistants to the Commissioner and placed them in charge of the offices in Buffalo, Syracuse and Rochester. In each of these cities there are offices of the Bureau of Inspection, the Bureau of Workmen's Compensation and the Employment Division as well as the State Insurance Fund. Because of the presence of the Commissioner and Secretary in the Albany and New York offices, no local administrators were necessary in those cities. At the present time all local administrative questions are referred to the Assistants to the Commissioner, and local people have a direct responsible representative of the Commissioner to whom they can turn for information of any activity of the Department, or to complain of any matter which needs to be called to the attention of the authorities. Likewise, in case of need in one bureau, the Assistant directly on the ground can make arrangements for help from another bureau, which formerly could not be done without delay and reference to the Commission itself.

Already the system of having in each of these principal cities of the State a responsible representative of the Commissioner is showing excellent results and the people in the localities served by those offices are greatly pleased at their ability to make direct and immediate contacts with the Department.

BUREAUS

The following bureaus, each under the supervision of a responsible director, were established:

Bureau of Inspection.
Bureau of Workmen's Compensation.
Bureau of State Insurance Fund.
Bureau of Industrial Relations.
Bureau of Research and Codes.

Each bureau has such divisions as are set forth later in this report. Under the former organization there were ten independent bureaus, each under a separate head, and with no effective means for cooperation. Some of the bureaus had functions so closely related, and in some respects overlapping, that they could have been and should have been combined. An example of this was the Bureau of Inspection and the Bureau of Boilers and Explosives. Each was under a separate head, and each had its own set of inspectors who went about through the State without reference to the others. Likewise, the preparation of Industrial Code rules to amplify and supplement the Labor Law and to prevent accidents and preserve life and health, was carried on in a bureau separate and distinct from the more distinctly research divisions such as the Division of Industrial Hygiene and the Bureau of Women in Industry. These research divisions likewise were entirely independent of each other. Here was a great lack of corelation, and the contacts between these divisions could only be effectively made through the Commission itself as occasion arose. Consequently a consistent and coördinated program could not be carried through. This has been rectified by placing them all together as divisions in one bureau.

The same thing is measurably true of the old Bureau of Mediation and Arbitration and the Bureau of Employment. An employment office, in close touch with the industries in its locality, might become aware of a strike or threatened strike, but felt no responsibility to report that fact to the Bureau of Mediation and Arbitration, which was independent of it and supervised by a different commissioner. And yet by placing these two activities in one bureau under the same head, it is found that each can be of great assistance to the other by pooling information relative to industrial conditions and by making use of common contacts.

The bureaus thus established have the following divisions:

Bureau of Inspection:
- (a) Division of Factory Inspection.
- (b) Division of Mercantile Inspection.
- (c) Division of Homework Inspection.
- (d) Division of Boiler Inspection.

Bureau of Workmen's Compensation:
- (a) Division of Claims Examination.
- (b) Division of Medical Examination.
- (c) Division of Self-Insurance.

Bureau of State Insurance Fund:
- (a) Underwriting.
- (b) Accounts.
- (c) Claims Adjustment and Medical.
- (d) Safety Engineering.
- (e) Actuarial.

Bureau of Industrial Relations:
- (a) Division of Mediation and Arbitration.
- (b) Division of Employment.
- (c) Division of Aliens.

Bureau of Research and Codes:
- (a) Division of Industrial Codes.
- (b) Division of Women in Industry.
- (c) Division of Industrial Hygiene.

The work of each bureau will be discussed under the appropriate head, and is also discussed more in detail by the bureau heads in their separate reports, submitted herewith and to which reference is made.

FINANCES

Perhaps the outstanding feature of the present organization is the great reduction in the expense of maintaining the Department.

The revised Labor Law contained a provision reappropriating the balance of unexpended appropriations made to the former Industrial Commission for the fiscal year ending June 30, 1921. This reappropriated balance was made in a lump sum to carry the Department until the end of the fiscal year, June 30, 1921. The former Industrial Commission had requested of the last Legislature deficiency items totalling $85,300 to carry the Department along to the end of the fiscal year ending June 30, 1921. This was in addition to the appropriation that had already been made of $2,380,222.86. Of this sum $1,900,000 in round figures was for personal service.

By reorganizing the work and by not filling unnecessary positions that became vacant, and otherwise effecting economies, we completed the fiscal year without the need of the $85,000 deficiency that had been requested, and even turned back into the State Treasury after all expenses had been paid, more than $150,000.

For conducting the Department for the current fiscal year, commencing July 1, 1921, the Legislature by Chapter 340, Laws of 1921, appropriated the sum of $1,500,000, and provided that not more than $1,200,000 should be used for personal service. That law also provided that the Commissioner should submit a schedule showing the manner in which such moneys were to be expended, which would become effective when approved by the Governor, the Chairman of the Senate Finance Committee and the Chairman of the Assembly Ways and Means Committee.

Pursuant to Chapter 340, the Commissioner submitted such a schedule, which included salaries and temporary services totalling $1,200,000, and for maintenance and operation, other than personal service, $300,000, and such schedule was duly approved and filed with the Comptroller.

In order to bring the expenditures of the Department within its appropriations, it was necessary on June 30 to reduce the force of employees by a considerable number. We had proceeded slowly with the reorganization of the work until July 1 and followed the policy of dropping employees prior to that time who were not performing any useful service, and whenever a vacancy occurred it was not filled unless for a special reason. Thus by this means the payroll of the Department became considerably reduced before the new appropriation took effect.

All persons who were to be dropped on June 30th were notified on June 15th and given two weeks' leave of absence with pay in order to permit them to seek other employment.

During the year prior to my assuming office, the average number of employees actually on the payroll of the Department was 1070. From April 15th, when I took charge, to June 30th, the end of that fiscal year, the average number was 1019, showing an average reduction of 51 employees. However, from July 1st on, the average number of employees was 711, a reduction from the previous year of 359.

Owing to the faulty accounting methods in practice in the Department previously, I was unable to ascertain the monthly expenditures for any particular month. The only method possible was to take the total expenditures for the year and divide by 12 to get the average. This does not give an entirely true picture, for as we have seen the expenditures for the last two and a half months were very considerably lessened. But taking this general average, we have a monthly expenditure, during the fiscal year ended June 30, 1921, of $189,972.65.

Since July 1, 1921, under the present appropriations, our expenditures per month have been as follows:

July, 1921	$117,507 98
August	117,550 15
September	114,980 17
October	119,257 49
November	118,414 23
December	118,235 87
Total for six months	$705,945 89

Thus, unless unforeseen circumstances arise with unexpected demands for expenditures, we will complete the present fiscal year well within our appropriation.

The requests for appropriations made by the former Industrial Commission, submitted to the last Legislature, for conducting the Department for the current fiscal year totalled $2,878,205. Instead of this appropriation, we received an actual appropriation of $1,500,000, which indicates a saving over the amount requested of $1,378,205.

This reduction in personnel and curtailment of expenditures has been accomplished in my judgment without any appreciable loss of efficiency anywhere in the Department, but with an actual increase of efficiency in some places.

I desire to take this occasion to commend the zeal and energy with which the work is being accomplished by the present force. Almost without exception they are working hard and faithfully to keep the work of the Department up to the splendid standard they are now maintaining.

There is submitted herewith a detailed statement of expenditures for the fiscal year ended June 30, 1921. (See Appendix 2.) There is also attached hereto a complete payroll of the Department as of July 1, 1921. (See Appendix 3.)

Section 77 * of the Workmen's Compensation Law requires that the total cost of administering the Compensation Law shall be assessed against all compensation carriers and paid over to the State Treasurer. Some time after I assumed charge of the Department, I discovered that no assessment had been laid against the carriers for the fiscal year ended June 30, 1920. Work was immediately commenced to gather the data of expenses and the amounts of compensation paid during the year by each carrier, and thereupon on September 1, I issued an order levying an assessment against all carriers, including the State Fund and self-insurers, amounting to $566,177.81 pro rata, based upon the amount of compensation payments of each. These assessments have been in large part collected by now, some few items only being in dispute, and I have turned in to the State Treasury the sum of $557,367.39 up to the present time. (See Appendix 5.)

I submit herewith a copy of the order and statement for the assessment of the cost of administering the law, issued September 1, 1921. (See Appendix 4.)

The figures are practically complete now for the assessment for the fiscal year ended June 30, 1921, and an order to that effect will very shortly be issued.

INSPECTION

Efficient law enforcement depends upon efficient inspection. The report of the director of the Bureau of Inspection submitted herewith gives the details of the inspection work for the fiscal year. It has been a year of large activity judging by the number of regular and special inspections, and has been productive of good results.

An examination of the work of the individual inspectors, however, showed that all of the inspectors completed their regular annual inspections a considerable time in advance of the end of the fiscal year. The great reduction of regular inspections beginning in March and extending to the end of June, and the corresponding increase in the number of special inspections during that time is conclusive evidence to my mind of the fact that as the inspectors completed their regular inspections it was necessary for them to find something to occupy their time, and so they made many special inspections. These special inspections are not wholly productive of good results and they are too apt to become productive of irritation.

Upon this showing it was apparent to me that there was a considerably larger force of inspectors than was necessary properly and evenly to administer the law. Upon the basis of these figures, therefore, I directed a considerable reduction in the number of inspectors.

The State had formerly been divided into nine supervising inspection districts, each with a supervising inspector and staff and

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* Section 77 renumbered § 126 and amended by ch. 615, L. 1922.

files, five of which were in New York City and Long Island, the remaining four supervising districts being up-state with headquarters at Albany, Utica, Rochester and Buffalo. In reducing the inspection force, I was convinced that better results would be obtained at less expense by a more centralized system — by reducing the number of supervisory districts. Accordingly, I directed a reduction of such supervising districts to seven, four to be comprised in Greater New York, Long Island, Westchester and Rockland counties. These latter counties being in much more direct communication with New York City than with Albany, the work can be much more readily supervised from the New York office and at the same time the change will meet in large measure the convenience of the people residing in those counties. In the upstate territory, the Utica office was abolished and the work redistributed between the Albany, Rochester and Buffalo offices. At the same time I gave directions for the supervising inspector in Rochester to spend at least one day a week in Syracuse at the offices of the Department there, for the convenience of people in that city and surrounding places who find it more convenient to go to Syracuse than to Rochester.

While the figures of inspections for the period subsequent to July 1 are not properly a part of this report, it is evident from my examination of the work that the regular work of inspection will be entirely completed well within the fiscal year, notwithstanding the reduction in the inspection force.

A number of improvements in methods have been inaugurated. As an example, I might cite that the old practice of requiring the inspectors to make out new inspection cards for every building entered each year has been modified. This inspection card contains a full description of the factory building, a miniature plan of it, details of exits, sanitary conveniences, etc. Much of the inspectors' time was consumed in making out such cards.

Now the inspector has last year's card with him when he inspects a factory, and if no substantial changes have been made, he returns the card to the supervising inspector with a statement to that effect. Since in the majority of cases no physical changes have been made in the buildings, a vast amount of time is saved and the records of the Department are not loaded up with thousands of unnecessary and bulky papers. Of course, if changes have been made, the card is corrected to conform, or a new card is made out, so that at all times we have in the Department a factory building card that accurately describes conditions in every factory in the State.

For years we have been hearing of duplicate inspections and the subject has been frequently discussed in the Legislature. Notwithstanding, however, such general condemnation, I found a considerable amount of duplicate inspection was still in effect in the Department. Upon personal visitation to some establishments, I found that often two and sometimes three inspectors from the Department had made separate inspections of the same plant, and for the most part these were small and relatively unimportant establishments, employing very few persons.

The places where such duplications existed were for the most part mercantile establishments having a small amount of factory work done in connection with them, such as tailoring establishments, bakeries and lunchrooms, automobile repair shops and accessories plants. In each of such class of establishments it was the regular practice to make an inspection by a factory inspector and also by a mercantile inspector. Neither inspector looked out for the work of the other; it was entirely uncoordinated; and both inspectors might happen to visit the same establishment the same day. Neither knew what orders were issued by the other, and did not try to find out. If the establishment happened to have a boiler generating fifteen pounds of steam or more, then in addition to these two first inspectors a third inspector came to inspect the boiler.

This practice I found to be very extensive, leading to literally thousands of duplicate inspections. The situation was in my mind wholly unjustifiable, and I took steps to eradicate the difficulty. Under the present practice no factory and mercantile inspectors inspect the same establishment. The mercantile inspector must look after any incidental factory work done on the premises of any store he visits. Likewise, a factory inspector visiting a bakery also looks after the mercantile work connected with it.

Not only does this cut down a large number of absolutely unnecessary inspections, but also it eliminates the danger of conflicting orders, which I found were sometimes issued.

The work of the Inspection Bureau has been organized into four divisions, the division of factory inspection, under direct charge of a chief factory inspector; a mercantile division, under the chief mercantile inspector; a homework inspection division, under the direction of the chief homework inspector, and boiler inspection division, under the chief boiler inspector. The latter division was formerly an independent bureau under a so-called chief engineer. The work of each of these divisions is well up and is being thoroughly done and efficient results are being obtained.

Formerly the inspection of explosive magazines was under the jurisdiction of the boiler inspection bureau, and the boiler inspectors enforced provisions of law relative to explosive magazines. This work has been transferred to the factory inspectors and the mine inspectors under the direction of the chief factory inspector. The work of the boiler inspectors requires highly trained men whose time should not be devoted to the more or less routine work of inspection of explosive magazines. Moreover, the factory inspectors are in closer touch with the industries where such magazines are maintained. Many explosive magazines are maintained in connection with mines and quarries. Formerly, while the mine inspectors inspected the mines and quarries they could not inspect the explosive magazines but a boiler inspector was required to make a special trip for that purpose. Under existing regulations mine inspectors must inspect all explosive magazines maintained in connection with mines or quarries.

WORKMEN'S COMPENSATION

The importance of the Bureau of Workmen's Compensation cannot be overestimated, for through this bureau is carried out the administration of that very beneficent statute which provides for the payment of compensation to the thousands of workmen injured at their work every year or the dependents of those whose accidents result fatally.

No one today will seriously gainsay the importance and usefulness and the intrinsic justice of the Workmen's Compensation Law. Controversial as it was at the time of its enactment and a law to which a large number of persons did not give their full confidence, it has become firmly established not only as a part of our judicial system, but as an accepted part of our industrial system. Few, if any, will be found today who would lay it aside and return to the old system of the rule of negligence with its protracted and tedious court procedure, its uncertain burdens and its uncertain and all too frequently denied benefits.

Today the employer so well knows and understands his obligations and their cost that he plans in advance to absorb it in his industry and the burden of relieving the distress of industrial accidents is carried over into the cost of production and so spread as to fall evenly and without distress, while on the other hand, the relief from distress, nay, sometimes actual destitution, is certain and for the most part prompt.

The great advantages of it seem to me to be, first, a definite and fixed liability upon the employer, who represents the industry, second, a certain method of providing for the security of the payment of compensation to those entitled, and third, a simple and inexpensive procedure for obtaining the compensation when it becomes due.

Through the agency of an administrative body, without formal or technical rules of proof and with an informal procedure, the services of attorneys on behalf of injured men or their dependents have been for the most part unnecessary and in comparatively few instances are they resorted to. The injured person is for the most part his own lawyer and he is generally a good one, and with the aid of the referee he has little difficulty in obtaining his just rights.

New York State, almost alone of the 42 States in which workmen's compensation laws are now in effect, has maintained the system of closely supervised claim adjustment. The system has always proceeded on the theory that the State must be in contact with the claimant and all his dealings with the employer or insurance carrier at every stage of the proceedings. The tendency of amendments to the law has heretofore been to make any real contact between the employer and his injured workman most difficult of realization and such contacts had to be made through the Department. The inevitable result of this trend was to slow down the process of claim payments and to increase the machinery of the law.

Discerning this tendency and realizing that it was foreign to the fundamental purpose of the law, Governor Miller pointed out in his message to the last Legislature that the law should be amended so as to make compensation payable in the same manner as wages. This called for a more simple and direct method of dealing between the employer or his insurance carrier and the workman. To carry out the Governor's recommendations a law was enacted (L. 1921, ch. 540, amending § 25) that established new procedure with two principal objects, first, prompt payment of compensation as soon as due, and without waiting for any formal action of the Department, and second, an opportunity in every case for the claimant to appear before the Department before the closing of any claim.

This law, of course, made a distinction, as was necessary, between the uncontested claim for compensation, and the contested claim. But if the facts of the accident are known, as they are in most cases, and the wage rate is agreed to, there would seem to be no good reason why the first payment of compensation should not be made as soon as due and the payments regularly kept up thereafter until the closing of the case. Experience has demonstrated that the final closing of a compensation claim must be adequately safeguarded. Under the old direct agreement provision of 1915, the Department came into contact with the claim at the beginning of payments, but the abuses that arose under that law were all due to the fact that there was no requirement for any close supervision of the claim at the time of stopping payments.

Under the present system of a hearing on closing, all questions can be examined into before the final closing or last payment, and if an error was made in the initial payments, it can be rectified at the final hearing, but the claimant in the meantime has been receiving money upon which he and his family can subsist.

Under the new law, in order to stimulate employers and carriers in making prompt payments of compensation without waiting for an award, it was provided that the employer or insurance carrier must promptly notify the Commissioner either that compensation is being paid or that the right to compensation is controverted. If the right to compensation is not controverted, compensation becomes due on the twenty-first day of disability, that is to say, one week after the expiration of the 14-day waiting period, and if any payment of compensation is not paid within 10 days after it is due, additional compensation to the extent of 10 per cent is due as a penalty and is payable to the claimant. It was further provided that where a claim is controverted and the insurance carrier or employer without just cause requests an adjournment $5 may be assessed against it for each such adjournment, which charge shall apply against the cost of maintaining the Department.

The new law went into effect on July 1, 1921, which was immediately after the close of the fiscal year upon which we are now reporting, and the figures in the report of the Bureau do not reflect in any way the results of the new law.

New Provisions of Compensation Law

At the last session of the Legislature important amendments were made to the Workmen's Compensation Law, chief of which was the requirement that the employer or his insurance carrier should promptly pay compensation when due, and continue thereafter unless the claim is contested and notice to that effect is given to the Industrial Commissioner. Failure to pay such compensation when due or to file a notice of contest makes the employer or insurance carrier liable to a penalty of 10 per cent, which is to be added to the compensation and paid to the claimant.

Whereas the whole structure of the law formerly was such as to discourage payment of compensation prior to an award after a hearing, the present provision encourages prompt payment within 10 days after the right to compensation arises. It must be borne in mind that the vast majority of claims are not contested. There could be no successful contest. How then to get compensation into the hands of the injured workman at the time when it is most needed, that is during the early period of disability, and to continue it thereafter during the continuance of disability, was the problem. The new law has been affording very substantial relief along those lines. The law only went into effect on July 1 last, but already we find 56 per cent of all claims being paid in advance of an award and without contest. And we find 19 per cent being contested on some minor ground, such as exact wage rate or date of return to work, and these contests are adjusted for the most part without formal taking of testimony. Thus, then, 75 per cent of all claims are being paid without the formal hearing and long delays incident to the old system.

Of course if such payments in advance were to result in claimants receiving less than the law entitles them to, the system could not be tolerated. But the law provides that no case can be closed without an opportunity to the claimant to appear and be heard, and further that at any time during the payment of compensation he may be heard if he requests it. On making the final payment, or what he believes should be the final payment, the employer or carrier gives notice to the Commissioner and a duplicate of such notice is sent to the claimant with a notice of hearing when he may show that he is entitled to further compensation if that be the fact. If a workman, however, has entirely recovered, is receiving his regular wages and has been paid the full compensation, he is not obliged to come to the Department for a perfectly useless hearing at the expense of a day's wages and carfare, only to be told what he already knows, namely, that he has received all the compensation to which he was entitled. This was a very frequent occurrence before, happening many times every day and exciting criticism and disgust with the law, and was thoroughly objectionable.

Compensation is, therefore, now paid as nearly like wages as it is possible to make it, which should be the aim of all compensation administration.

Co-operation in Administration

The coming into effect of the new law and the necessity of changing the forms and procedure to conform to it, made it seem advisable to the Commissioner to invite the co-operation of all parties directly interested in its operation. Accordingly, soon after I took office I called a conference and invited to participate in it the members of the Industrial Board, the representatives of all insurance carriers, both stock and mutual, and the State Fund, as well as self-insurers, employers' associations and the Federation of Labor. Believing firmly that co-operation is the best way to achieve results and realizing that an economical and efficient administration was to the interest of all, I called upon the conference to aid us in our task. As a result a planning committee was appointed representative of all the interests.

This committee suggested the appointment of three committees of seven each, one to revise the many forms in use in proving claims and to simplify them; one to consider internal office administration, including the method of receiving, examining, hearing and filing of claims and notices; and one to consider rules of procedure. The most available men, expert in their several lines and technically qualified, were drafted from some of the insurance companies and self-insurers. The workingmen were also represented on these committees. The committees went immediately to work and rendered most difficult and painstaking service, surveying their problems and then seeking the remedies. From these committees came suggestions, drafts of new rules, forms, etc., and all received the most careful thought of the Commissioner. Rules of procedure have been adopted by the Industrial Board based upon the report of the Committee and upon the experience of the members of the Board.

Attached hereto are the Rules of Procedure adopted by the Board. (See Appendix 6.) No rules of procedure were in effect prior to these rules. The procedure not only was informal, as it should be, but it was not uniform and was apt to be according to the whims and ideas of the individual referees.

The new forms drafted were much briefer and more understandable than some of the old ones. They were also brought up to date to conform to the new law and new procedure. The Committee on Office Management also reported recommendations for important administrative changes designed to expedite the work and to maintain efficiency with a reduced force.

The work of these various committees was carried out in a most commendable spirit. All working with one end in view, to improve the service and give New York a model of administration, it was to be expected that divergent views would be expressed. However, it is worthy of note that the recommendations finally submitted were all unanimous and accepted by all parties. At no time was there evident any disposition to attempt to take any advantage, but a broad spirit of fairness pervaded their councils.

The Commissioner esteems the Department most fortunate in having secured the services of the splendidly equipped men who gave of their time and effort to aid us. I desire to acknowledge the great service rendered by all. Not the least of the benefits was the better understanding of the points of view and the problems of all the parties under the law.

Recommendations

While it is probably true that the Workmen's Compensation Law of this State is in many respects the model and the most liberal statute of any, still there are provisions that should be amended to meet present conditions.

The joint committee of the Legislature that was appointed a year ago to recodify the Labor Law was continued in power by the last Legislature and directed to examine the Workmen's Compensation Law and to recommend such changes as seemed necessary.

This committee, commonly known as the Knight Committee, has been at work during the past summer, and this Department has given such assistance as it could. The Commissioner and members of the Board have met with the committee frequently and have gone over in detail the various provisions of the law and have suggested many amendments.

While the form and structure of the law itself could be changed a good deal to give it a more logical arrangement, it seems to us that it would be unwise to disturb many of the provisions of the law that have been the subject of litigation in the courts and whose meaning has become well settled by court decision. It is our strong recommendation, therefore, that the old form of the law, and the old language of the various sections be retained so far as seems possible, changing the language only where there is a definite reason therefor.

One of the most illogical provisions of the law is that relating to permanent partial disability, by which term is meant the loss or loss of use of a member, which loss is permanent but not wholly disabling. Compensation for such dismemberments is allowed for definite periods of time in accordance with a fixed schedule in the law. This schedule does not take account of the period of complete disability generally referred to as the healing period. Such healing period differs very greatly in different cases. The normal healing period, where the wound heals by primary intention and without infection, is not by any means the rule, and we have very frequent cases where the normal healing period is greatly extended by complications arising.

The amount of compensation paid, however, would be exactly the same if the end result is the same. This works greatly to the disadvantage of the person whose healing period is lengthened by infections or other complications. If the schedule of disability compensation is regarded as in the nature of damages to compensate the worker for his future loss of earnings by reason of the permanent loss of a member, then it would seem logical and just that the temporary period of total disability or healing period should be compensated in addition to the number of weeks represented in the schedule.

I earnestly recommend that the law be amended to provide such additional compensation.

I likewise recommend that the law be strengthened in regard to the prosecution and penalties for non-insurance. One of the great evils under the Compensation Law is the neglect or the refusal of the employer to insure his liability. By lessening his cost of operation he acquires certain competitive advantage over his neighbor who complies with the requirements of the law, and when the inevitable accident occurs it finds him unprepared to pay the compensation demanded by the law. Sometimes he finds himself driven into bankruptcy or put out of business by a death claim, when observance of the law would have resulted in placing that burden upon the great resources of the State Fund or other insurance carrier.

One of the difficulties in prosecuting such employers is to prove affirmatively that they are uninsured. I recommend that the law be amended to provide that failure to inform the Commissioner within 10 days after demand of the facts with regard to his insurance shall be presumptive evidence of such employer's non-insurance.* We could then prosecute such employers and put the burden on them of showing that they had complied with the law. I also recommend that all fines collected in non-insurance cases be paid to the State Treasurer for the benefit of the fund held by him for paying compensation to persons suffering a loss of member after having previously lost another member.† That fund, now made up by payments of $100 by carriers in all cases of death in which there is no person entitled to receive compensation, is wholly inadequate to meet all the demands made upon it. The State has assumed the obligation of providing compensation payments for life to persons who having previously lost one member subsequently lose another member and thereby become permanently totally disabled. It would be disastrous indeed if the pitiable beneficiaries of this special fund should in later years find themselves deprived of the compensation to which they are en-

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*Amended by L. 1922, ch. 615, § 51.
† Amended by L. 1922, ch. 615, § 52.

titled by reason of the insolvency of the fund out of which it is paid. The Actuary of the Department informs me that it will require payments of more than $400 in each no-claim death case to bring this special fund up to the point where it can carry all of the necessary claims to maturity.

I recommend, therefore, that in every fatal accident case in which there are no dependents the employer or carrier be required to pay $500 to this special fund, instead of the present $100 payments.* At the same time, I recommend that the present payment of $900 in all such cases, for a special fund out of which additional compensation is to be paid to injured persons undergoing vocational rehabilitation, be reduced to $500. It is estimated that payments of $500 into that fund will provide sufficient funds for that purpose, at least for the present.

Longshore Workers †

Originally intended to be brought under the Compensation Law, all longshore† and other maritime workers were taken out from under the jurisdiction of the Compensation Law by the decisions of the United States Supreme Court in *Southern Pacific Co.* vs. *Jensen* (244 U. S. 205), and *Knickerbocker Ice Co.* vs. *Stewart* (253 U. S. 149). It has been now definitely held by the Supreme Court that the States cannot make rules of liability for employers engaged in carrying on maritime occupations.†

But it has not been held that the States cannot provide an elective system of compensation when employers and employees both desire to submit to the State Law. I believe that such an election if exercised by both the employer and his workers would be sustained by the courts. It is my information that the vast majority of the harbor workers would much prefer the Compensation Law to the admiralty courts. We are told also that many employers would similarly come under the State statute, if the Board were authorized to make awards in such cases.

I recommend, therefore, that where employers and their employees engaged in maritime employments elect to come under the Compensation Law, the Industrial Board be authorized to make awards of compensation, and that the State Insurance Fund and other carriers be authorized to insure such liability.‡

Such an amendment will, I feel sure, result in bringing most, if not all, the maritime workers in the State under the practical operation of the Compensation Law, and give to them all the benefits secured to other workers thereby. This would apply alike to workers in and about the harbor and those engaged in river traffic, but also to the lakefront workers in Buffalo and employees on the Barge Canal.

It has been argued that such voluntary submission would not protect the employer from law suits where the employee had a good cause of action for negligence. It is well to remember, however, in that respect that, prior to the decision in the *Jensen* case by the United States Supreme Court, it had been held that there was concurrent jurisdiction between the State Law and the admiralty courts, and that an employee could elect which jurisdiction he would accept, and during that entire time I know of no instance of an employee's electing to pursue his remedy in admiralty in preference to the Compensation Law.

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* Amended by L. 1922, ch. 615, § 15, subds. 8 and 9.
† For the present status of longshoreworkers see note on p. 212.
‡ This provision was adopted in § 113 of the recodified Compensation Law, ch. 615, L. 1922.

From that experience we might well expect such a permissive or elective coverage to be generally adopted, and the satisfactory conditions prior to the decision in the *Jensen* case to be reestablished.

It is not improbable, on the other hand, that the Supreme Court might hold such elective coverage by the employer and employee to be exclusive and to operate to bar any action in admiralty. In the recent case of *Grant Smith-Porter Ship Co.* vs. *Herman R. Rhode,* decided by the United States Supreme Court in January, 1922, the court held that where the employer and employee had jointly submitted to the Oregon Industrial Accident Fund, and where the employment was maritime, the injured employee could not maintain an action in admiralty.

Canal Employees[*]

One effect of the decisions of the Supreme Court has been to deprive employees of the State engaged in navigating or operating the Barge Canal of any remedy for injuries.

All employees of the State engaged in hazardous employments are insured for compensation in the State Insurance Fund. The fund is not permitted by law to pay any benefits other than such as arise under the Compensation Law. These employees of the State have no remedy in admiralty, for the State itself cannot be sued.

An amendment which would permit the State Fund to assume such liability and to pay awards of compensation in such cases, would entirely clear up this situation and would make certain the payment of compensation to injured employees of the State, notwithstanding their employment may be of a maritime nature.

Estoppel

I further recommend that where a carrier has collected a premium for insurance of employees under a policy that includes coverage under the Workmen's Compensation Law, it be estopped from denying liability under the Compensation Law on the ground that the employment was not hazardous or was not carried on for pecuniary gain.[†] We frequently find that insurance companies issuing joint compensation and liability policies and selling insurance to employers having four or more employees, permit such employers to believe they are under the Compensation Law until an accident occurs and then the company asserts that it is not under the Compensation Law, because the business is not hazardous or is not carried on for pecuniary gain. This seems a most unfair practice. I believe that a carrier should not be permitted to deny his liability under such circumstances.

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[*] For changes in the status of canal employees since June 30, 1921, see note, on p. 212.

[†] A provision carrying out the above recommendation was adopted in the recodified Compensation Law, § 55, ch. 615, L. 1922.

Such a provision might also have an effect upon the maritime employments above referred to, and operate to stop the carrier from objecting to a claim on the ground that the employment was maritime.

Loss of Hearing

Although the Compensation Law makes definite provision for loss of members and loss of vision, it has never taken account of loss of hearing. Fortunately cases of loss of hearing are extremely rare, yet when a workman by reason of an accident does lose the hearing in both ears he has sustained a most serious vocational loss and will be greatly handicapped in most employments. Accordingly, I recommend that loss of hearing of both ears be compensated in some suitable amount.* Because of the vast difficulties in administering the law with regard to loss of hearing of only one ear, and as there is no suitable method of measuring the vocational loss for such an injury, I do not recommend a definite provision for loss of hearing of one ear. So many people are wholly or partially deaf in one ear that without careful physical examinations before employment it would be almost impossible to determine whether the loss was due to an accident or antedated it.

Subcontractors

I recommend that, if a feasible way can be found, contractors be held liable for compensation to employees of a subcontractor injured on the job, unless the main contractor sees to it that his subcontractor is properly insured under the Compensation Law.† In many cases small contractors, especially in painting, carpentry, excavating and trucking, do not carry compensation insurance. If the main contractor is made liable for compensation unless the subcontractor is properly covered, I am satisfied that he will take good care to require evidence of insurance before giving out a subcontract.

Other minor amendments have been submitted to the joint committee for consideration in drafting their revision of the law, but will not be specifically mentioned herein.

Medical Treatment

Originally the Compensation Law provided that an employer must furnish his injured employee medical treatment for sixty days after injury. Recognizing that in many cases sixty days was wholly inadequate, the law was amended to provide that medical treatment might be extended beyond sixty days if ordered by the Board. The result of that amendment was to extend medical treatment in practically every case where the process of healing extends beyond sixty days. The best practice among insurance carriers and self-insured employers is to give medical treatment unlimited as to time. This being the substantial rule, it seems logical to amend section 13 by removing the sixty-day limitation, which means nothing in most cases, but which is still resorted to as a subterfuge in a few cases. It seems only fair and logical that if an employee is injured the employer should furnish medical treatment for so long a time as is required to recover from such injury.*

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* This recommendation was incorporated in § 15, subd. 3 of the Compensation Law, ch. 615, L. 1922.

† Adopted in the recodified Compensation Law, § 56, ch. 615, L. 1922.

Great difficulty has been experienced in connection with the payment of physicians' bills by employers or insurance carriers where the physician has not been directly furnished by the employer or the insurance company. I believe that if the physician renders adequate and competent medical treatment, and his charges are reasonable, he should be paid for his services. The physician, however, must understand that if he is to receive payment from the employer, or insurance carrier, he owes them an obligation to report promptly the nature of the injuries and the condition of the injured man.

I recommend, therefore, that the law be amended to require a physician promptly to report to the Commissioner and to the employer or insurance carrier the facts with regard to the extent of disability of an injured workman who is being treated by him.*

SELF-INSURANCE

One of the three methods by which an employer can comply with the law and secure payment of compensation to his employees is by becoming what is commonly known as a self-insurer. In order to avail himself of the right to be a self-insurer an employer must certify to the Commissioner his financial ability to pay compensation for himself, and deposit securities of the kind described in section 13 of the Insurance Law in an amount in the discretion of the Commissioner. Under the rules of the Department in regard to self-insurance, the amount of security to be deposited by a self-insurer is regulated according to what would have been his premium for insurance for six months in the State Insurance Fund with the proviso that no deposit of less than five thousand dollars will be accepted nor shall more than fifty thousand dollars be required in any case for the original deposit. Thereafter, and at six months intervals, the Commissioner has the right to readjust the amount of securities on deposit according to the amount of outstanding liability for unpaid compensation, and he has the right at any time to sell any such securities on deposit with him in the event of the non-payment of an award of compensation and to pay the award out of the proceeds of such sale.

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* Both these recommendations are covered by amendments to section thirteen of the Compensation Law (ch. 615, L. 1922).

The result of the semi-annual valuation of claims has been to require the deposit of larger amounts of additional securities.

The number of self-insurers has been constantly growing in this State and is likely to continue to grow. I am of the opinion that self-insurance furnishes the most satisfactory method of taking care of liability of any of the methods prescribed in the law so far as an employer of ample financial means is concerned. I am utterly opposed, however, to extending the self-insurance privilege to employers of small means or of doubtful business permanency. While I am aware that this policy may be open to criticism on the ground that it appears to favor the large and wealthy concern as against the smaller, that criticism is inherent in the system itself. I do not think the question should be approached from the standpoint alone of the desire of the employer, but, so far as this Department is concerned, it must be considered solely from the standpoint of what is best for the injured employees and their dependents. Financial stability and prompt payment of compensation are essential in self-insurance. In fact, it is very largely this same reason that makes necessary insurance of compensation liability at all. Such insurance operates to add to the law imposing a liability the financial soundness of the State Fund, or an insurance company, so that an injured workman or his dependents need not be dependent for their compensation upon the problematical ability of the employer to pay.

Self-insurance is undoubtedly a great stimulus to improve methods of accident prevention, and medical care and treatment of injured workmen. The cost of accidents falling directly upon the employer, he is more apt to adopt means and methods to prevent them and he has a direct financial interest in getting his injured workmen back to work in the shortest time and with the best results. Furthermore, the employer does not lost contact during the compensation period with his injured workmen as would be the case were he insured. The injured employee receives his compensation from the employer in precisely the same way that he receives his wages. If the employer's relations with his workmen are satisfactory, they are bound to continue satisfactory in case of injury, and such relations are worth going a great way to preserve.

I desire to invite your attention to what I regard as a defect in the law in regard to self-insurance. I believe the provision requiring the deposit of securities to be of the kind described in section 13 of the Insurance Law is too inelastic. Since the purpose of deposit of securities is to have security of a liquid nature, it would seem to me that every purpose of the law would be subserved by allowing the deposit of securities of the kind described in the Banking Law for investments by savings banks and trustees. As it operates, many employers have ample securities in their treasury of the kind permitted to savings banks for investment which they have to sell and convert into the kind of securities now required by law. This is always done at a financial sacrifice, and it is impossible at the present time for them to realize anything like the rate of income on their deposits with the Commissioner that they could realize upon the same money held in their business. I recommend, therefore, that subdivision 3 of section 50 of the Compensation Law be amended so as to permit the deposit of securities of the kind permitted for investments by savings banks, instead of the present provision that such securities be of the kind described in section 13 of the Insurance Law.*

I further recommend that all municipal corporations, counties, villages, towns and other political subdivisions be permitted to become self-insurers, if they do not place their compensation liability elsewhere, without the necessity of furnishing a financial statement and without depositing securities with the Commissioner.† This is wholly unnecessary in the case of such public corporations. Inasmuch as they have the taxing power of the State back of them, there can be no question of their financial ability to pay compensation for themselves. This is the rule now followed by the Commissioner, but in the interest of justice I believe that it should be translated into law and not left to the discretion of the present or succeeding commissioners.

There has always, heretofore, been evidenced considerable curiosity as to who were self-insurers in the State. So far as I can learn there has never been a published list of self-insurers. I find no reason for any such matter being kept secret but, on the contrary, when such information is kept secret it always invites secret avenues for information without the knowledge of the head of the Department and may be made the basis of unfair competition by the recipient of the information. All such applications are matters of public record, and I have concluded, therefore, to append hereto a complete list of self-insurers in the State of New York as of June 30, 1921. (See Appendix 7.)

The amount of securities on deposit with the Commissioner to secure the right of self-insurance to various employers on June 30, 1921, was the sum of $8,416,725; $5,450,225 of this amount constitutes original deposits to take care of current liability, and $2,966,500 represents deposits made on account of actual outstanding liabilities.

STATE INSURANCE FUND

The reorganization of the Department and the separation of the administrative and judicial functions of the Department marked the end of one of the chief criticisms levelled against the State Fund. For years it had been a constant source of attack and complaint that the administration of the fund was in the hands of the very same Commission that had the entire responsibility for the awards of compensation against the fund. It was urged that the Commission responsible for the solvency of the fund would, perhaps unconsciously, favor the fund as against the workman. No case of such discrimination was ever disclosed, and the complaint was usually from the stock insurance carriers who were in active competition with the fund for business.

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* Amended by L. 1922, ch. 615, § 50, subd. 3.

† The legislature of 1922 made every political subdivision of the State that had not already secured insurance, automatically a self-insurer (§ 50, subd. 4.)

As a result of these complaints efforts were made at various times to enact legislation taking the State Fund out of the Department, and either making it a separate Department or placing it under some other control.

Under the present organization, and as provided by law, the Commissioner alone is responsible for the administration of the fund, while the Industrial Board are solely responsible for the awards made against the fund. Their relation to the fund is much the same as their relation to any other carrier, and there cannot exist even a suspicion of favoritism of the fund.

As a matter of actual fact, however, the State Fund has always assumed the most liberal policy toward the injured workmen entitled to benefits to be paid from the fund. When it is considered that under the law the State Fund has no appeal from a decision of the Board, it will readily be understood that the tendency might be expected to be one of undue liberality rather than otherwise.

The complete report of the fund, including financial statement, appears on page 183.

The fund continues to be one of the leading carriers of compensation insurance in the State. This is true, notwithstanding the disclosures of some loose practices under its former administration which were brought to light in the public investigation made about two years ago. It was freely predicted that those disclosures and the effect of a public investigation would cause many policyholders to withdraw from the fund when their policy terms expired, and that the effect on the fund would be disastrous. While some policyholders did cancel, their number was practically offset by new business. The number of cancellations known to be due to the investigation was negligible.

Forceful evidence of the continued favor with which the fund is regarded by employers may be seen in the growth in the number of its policyholders. During the calendar year 1921 the net increase in policies in force was 1,451 and the number in force at the close of the year was 10,756. These figures may be compared with a net gain in 1920 of 903 and 9,305 policies in force at the close of the year. When we bear in mind that the Fund employs no solicitors and pays no commissions for the acquisition of business, such growth is a tribute to its fundamental soundness and its service and the low cost of its insurance.

One of the greatest difficulties we have encountered in the administration of the Fund has been the slow collection of premiums due. This is in part because the policies of the Fund are by law continuing or self-renewing, and have heretofore been written almost exclusively on a semi-annual basis. New policies are now being written on an annual basis very largely, and as rapidly as possible old policies are being changed over to an annual basis. This will obviate semi-annual billing, greatly reduce the expense of collections and will assure the Fund the premium necessary to carry the policy for a year.

Another consideration that has delayed collections of overdue premiums has been the provisions of Section 99 of the compensation law, which requires the Fund to certify to the Attorney-General all accounts in arrears for five days, and directing the Attorney-General to bring actions in the name of the People of the State of New York for their collection. It is a matter of simple business experience that accounts are rarely if ever paid in five days' time. This does not mean that the accounts are not good at all. It would be absurd to certify such accounts to the Attorney-General to bring court actions. This would absolutely clog the Attorney-General's office with unnecessary work and make the collection of accounts far too expensive. Ordinary business judgment would dictate that we should exhaust every reasonable business method of collecting slow accounts before beginning court actions. Prompt and vigorous following up of such accounts by employees of the State Fund would in my judgment yield excellent results.

Accordingly, I departed from the policy heretofore followed of certifying hundreds of cases to the Attorney-General, and appointed a legal assistant to the Manager of the Fund charged with the direct responsibility of getting after delinquent policyholders, and compelling them to pay their proper proportion toward the cost of carrying the compensation liability.

I feel constrained, therefore, to recommend an amendment to Section 99, to relieve the Attorney-General of the burden of collecting bills for the State Fund, but to permit the Fund directly to collect and sue for premiums due from its policyholders.* As most of the accounts are relatively small, a more general use of the municipal and other inferior courts should be made.

In making this recommendation no criticism is made or implied of the Attorney-General's office. We have always had very ready coöperation from that office. The point I wish, however, to emphasize is that the State Fund should conduct its collection work in the same businesslike way that any similar business organization would. Furthermore, at present the State receives no reimbursement for the expense to which the Attorney-General is put. Whereas, if the work is done through the State Fund representatives, the State will be fully relieved of all such expense, and it will be borne by the State Fund in the same way as all its other expenses.

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* For the law as passed, see L. 1922, ch. 615, § 99.

I deem it my duty to point out that the State Fund has been greatly embarrassed in giving full coverage to its policyholders where there arises accidental maritime liability. The decision of the United States Supreme Court in the case of *Stewart* v. *Knickerbocker Ice Company* (253 U. S. 149), decided in 1920, seems to have finally held that workers whose contract of hire is maritime in nature, or whose duties are maritime at the time of injury, are not under the workmen's compensation laws of the various states, and it is beyond the power of Congress to delegate the power of such states to prescribe any such rule of liability for employers. The effect of this has been to place all such maritime workers outside of compensation protection and to throw them back into the old field of liability and suits at law or in admiralty. It not only was most unsatisfactory to the workers but has proven unsatisfactory also to employers. This is most particularly true of employers, only a small percentage of whose workers would come within the maritime rule or whose employees, as in many cases, would be engaged in maritime work for only a very small part of the time and under the compensation law the balance of the time. The ordinary insurance company can take care of the employer by issuing a policy which not only insures the employer against compensation liability but also against any accidental maritime or other liability. This, however, does not greatly benefit the workers for, unless there is actual liability due to negligence of the employer, the employee seldom receives anything when he is injured.

Particularly does this work hardship with respect to employees of the State who may be engaged in maritime work, such as those employed either on work of the canal at lock tending, etc., or on barges or boats navigating the canal waters or their terminal harbors. It likewise would apply to certain employees of the Conservation Department engaged in the protection of the shellfisheries. These employees if injured or killed cannot under the present state of the law be considered as coming within the scope of the Workmen's Compensation Law and, as they have no right of action against the State, they are forced to obtain relief by legislation and through the Court of Claims.

The situation so far as the State Fund is concerned could be greatly clarified by an amendment to the compensation law legalizing agreements between employers and employees to bring these employees within the provisions of the compensation law notwithstanding that their work may be of a maritime nature and permitting any insurance carrier, including the State Fund, to assume such liability and to pay any awards of compensation that might be made.* In this manner the State Fund would not only be permitted to assume liability for accidents to maritime workers of the State itself, and to pay awards of compensation made to them, but would also be enabled to give complete coverage to other employers of the State, some of whose employees are maritime and who jointly agree to accept the benefits of the Workmen's Compensation Law. This, I believe, would be a satisfactory solution of one of the most trying situations with which we have to deal in the administration of the compensation law.

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* Amended by L. 1922, ch. 615, § 118.

Having had for the last two years, as member of the former Industrial Commission, the supervision of the State Insurance Fund, I have repeatedly called attention to the anomalous situation caused by the present roundabout and unsatisfactory method of appropriating monies out of the State Treasury for the maintenance of the State Insurance Fund and for the reimbursement of the Treasury for such expenditures after the close of the fiscal year. The actual net result is that the State Insurance Fund, as it properly should, pays the entire expense of its own administration. The requirement, however, for appropriating monies in advance operates to tie the State Fund to a hard and fast budget made up months in advance by the Legislature and without regard to or knowledge of the actual business conditions that may have to be met during the appropriation year. It has seemed to me that some method should be devised whereby the State Fund under a proper system of control would be permitted to pay its administration expense out of its own funds without in any way being a charge upon the State. I believe the State loses at the least calculation ten thousand dollars annually in interest on the monies that it advances to the State Fund for payment of its expenses, which interest could readily be saved to the State by such a system as that suggested.

I therefore recommend that Section 94 of the compensation law be so amended as to permit the State Fund to pay its expenses out of its premium receipts and other funds in its hands upon quarterly estimates submitted by the Industrial Commissioner and approved by the Board of Estimate and Control. Probably some limitation should be put upon the amount that could be spent in any one year. While it is generally estimated that in private insurance companies the expenses, including acquisition costs, run as high as 30 to 40 per cent of the premium, I believe the State Insurance Fund could be most efficiently managed on an amount not in excess of 15 per cent of its annual premiums.*

I further recommend that the provisions of the compensation law in regard to rating declaration of dividends, maintenance of reserves, and catastrophe surplus and associations for accident prevention be entirely revised, made more simple, and made to conform to the actual practices that prevail with respect to those matters rather than to some theoretical standard as they now do. These sections are technical in their nature and were constructed prior to the actual existence of the State Fund and before any business was done. They have proven themselves thoroughly unworkable and should be revised in accordance with the best practices prevailing.*

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* For the law as passed see § 94, art. 5, of the recodified Compensation Law (ch. 615, L. 1922).

INDUSTRIAL RELATIONS

No subject in the whole field of industry is more important in these days than that of the relations between employers and workmen. It has seemed to me that the activities of the Department in this field have not heretofore been as fully developed as they should be nor sufficiently coordinated. Accordingly, I abolished as separate bureaus the Bureau of Mediation and Arbitration, the Bureau of Employment and the Bureau of Industries and Immigration, and established these activities within a single Bureau of Industrial Relations under a director. This bureau functions through three divisions corresponding to the former bureaus. Much has been done, however, to develop constructive plans for coordinating the work of the divisions. Under the director of this bureau has also been placed the work of the Department relating to public works, that is the eight-hour and prevailing rate of wages provisions in regard to public contracts.

Mediation and Arbitration

The work of the mediation and arbitration division of this bureau has been well done and has proved effective as far as it has been able to go. Under existing law, the services of the Department cannot go much further than the offering of the good offices of the mediators of the Department, and seeking to exercise moral suasion to bring together the two sides to the dispute. When they are brought together, an agreement most frequently follows. Such efforts, however, rest upon the good will and consent of the parties, and seem to proceed in no wise from a sense of public responsibility.

Occasionally the Department is called upon to act as arbitrator in such controversies. This differs from mediation in that arbitration follows only upon the submission of a controversy by both sides, they agreeing in advance to accept the findings and decision of the arbitrator. The number of actual arbitrations undertaken by the Department, however, is negligible, the effort apparently being by mediation to get the parties to select some outside arbitrator. The effect of this, whether intentional or not, is that the Department is not called upon actually to side with one party or the other in the given dispute, and so avoids giving offense to either side. At the same time it seems to me that this policy lacks somewhat of vigor and is more or less colorless.

The Commissioner is empowered by law to investigate the causes of strikes and lockouts, and undoubtedly he can delegate this authority to other officers of the Department. But with the manifold duties of administration, the Commissioner could give but scant time to the actual investigation of a dispute, if it involved the calling of witnesses and the taking of testimony. This power, under present conditions, could only be exercised in exceptional situations involving matters of great public interest.

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* Amended by L. 1922, ch. 615, §§ 92, 95–97.

I am firmly convinced, however, that investigation and the turning of daylight into many industrial controversies can be of greatest benefit, and the force of public opinion, moulded and guided by the conclusions and findings of an impartial investigation, be made an important factor in bringing about the settlement of disputes and the establishing of right conditions in industry.

Compulsory arbitration, which is not arbitration at all but is fiat, will not solve our industrial difficulties. Such fiat is apt to be unsatisfactory and irritating not only to both sides to the dispute, but likewise to the general public. It will not in my judgment be an aid to production, nor to keeping men usefully employed and contentedly working.

Rather than attempt to ram our opinions down the throats of either capital or labor, we should seek by argument and by logical reasoning from facts ascertained after investigation, to bring both sides to their senses and to a right determination of their difficulties.

Believing that investigation should be to a greater extent employed in industrial disputes, I wish to go further and call into the situation in greater measure than has heretofore been the case the ability and willingness to serve of a larger number of our private citizens of standing and reputation in their communities. There must be throughout the State a number of persons who would willingly serve in an investigation, if called upon and given authority to act. I recommend, therefore, that the power of the Commissioner to investigate strikes and lockouts be enlarged and that he be authorized to appoint boards of persons outside the Department to serve without pay, and who when serving will have the power to subpœna witnesses and take testimony under oath. Before such boards employers and employees could be brought and compelled to disclose to the public and also to each other the underlying causes that keep them apart. Such boards could file their findings and recommendations, and without attempting to compel acceptance of their conclusions, they could appeal to the public conscience to right the wrongs that exist. Neither side in industry can long afford to flout the just demands of society at large when those demands are predicated on the real facts.

In order that there shall always be persons available for service upon such boards of inquiry, I recommend that the Commissioner be empowered to appoint a panel of, say, one hundred members, in different parts of the State, who by designation of the Commissioner or by voluntary submission of the parties, may be called quickly into a given situation. I believe many qualified persons may be found glad to serve on such a panel.

Filing of Collective Labor Agreements

I desire to recommend the enactment of a statute which will require employers publicly to post in and about their plants or places of work, notice of any contemplated change in wages, hours of labor or methods of payment of wages, and to give prompt notice thereof to the Industrial Commissioner not less than ten days before such change is to take effect, and further that any organization of employers that takes joint action with respect to changing conditions of employment in any of the particulars mentioned, be similarly required to furnish information thereof to the Commissioner. I also suggest that any organization of workmen that takes action, by way of resolution of its organization or of any committee having power under the circumstances. making demands for changes in working conditions in any of the particulars mentioned, be required to give notice of such action to the Industrial Commissioner. With such required report to the Commissioner the Department will be in a position promptly to proceed to offer its services by way of mediation before an actual strike has been declared and before any cessation of work has taken place. This is generally the most effective time to take such action. I would also recommend that a statute be enacted requiring the parties to any agreement between an employer and his employees or between an association of employers and their employees affecting wages, hours of labor and other working conditions, to file such agreements with the Industrial Commissioner within ten days after they had been entered into. Such agreements can then be kept on file for official information and will also furnish a valuable index as to the time when agreements between employers and workmen are about to expire, in order that questions in dispute may be taken up in advance of the expiration of such agreements.

Employment

The question of public employment offices has been much in the public notice this year because of the distressing condition of unemployment existing throughout the country, and some have been critical of our policy in closing several of the State operated employment offices early last spring. Such criticism, however. proceeds from a misconception of the functions of an employment office and of the State's relation thereto. Some persons seem to be impressed with the thought that somehow a public employment office is going to create jobs, and that unemployment can somehow be remedied by opening such offices. There is only one sure remedy for unemployment and that is by creating employment. The causes are economic, and lie far deeper than anything that a public employment office can reach.

These offices do, however, perform valuable services in aiding in the distribution of such jobs as are available. They aid in relieving many individual cases of distress, and they enable workers to find jobs without paying tribute to the private fee charging agency.

When I took charge of the Department there were a number of employment offices maintained by the State in many of the smaller cities, as well as the large industrial centers of the State. These offices were a legacy from the old United States Employment Service, and were originally opened during the war as part of the government's war machine. After the close of hostilities Congress failed to appropriate funds to continue the United States Employment Service. At that particular time, however, the problem of the returning soldier was very acute, as was also the matter of getting jobs for the munitions workers who were turned back into peacetime pursuits. Urgently requested by the Federal authorities the State took over, at great expense, a considerable number of those offices.

The emergency that called for the support of the State for those offices passed with the end of demobilization and the final stoppage of all munitions and other wartime plants. Whether the State was to continue to maintain all these offices at large annual expense as a part of the regular activities of the State, or whether it should retrench was a question of policy that had to be decided. The question of employment is very largely a local problem. It did not seem logical to me to continue to charge indefinitely to the State at large the maintenance of purely local agencies to take care of local situations. Most, in fact practically all, of the hiring in these offices is of local people for local work. Why, then, should not the locality shoulder some of the expense? Why should one community without an employment office be taxed to maintain an office in another community which only benefits that other community? Certainly the State cannot afford to maintain employment offices in every community, and maintaining them in some and not others will inevitably lead to jealousy and eventual extension of the service and increase in the State expense.

I believe that the proper method of supporting public employment agencies is by the direct action of the local community, and by the State's contributing to such expense in proportion to the amounts contributed by the locality. The initiative, therefore, would be with the local community, its citizens would feel some responsibility for it and would be more likely to support its activities by reason of their local pride.

In such a situation if the Federal Government ever decided to appropriate funds for a national service cooperating with the States, the State could receive its grant of Federal monies and apportion them to the various localities to aid them in the extension of their work.

Aliens

The Division of Aliens has taken over such of the functions of the old Bureau of Industries and Immigration as it was found useful to retain. I deemed the title of the old bureau a misnomer and one that frequently leads to confusion. Immigration is a Federal function, and one with which the State cannot directly deal. The function of this Department is rather with aliens who have been admitted and are within our borders. Through this division are continued the functions of investigating the conditions of aliens and the licensing of immigrant lodging houses. The inspection of such houses and also the inspection of the temporary labor camps, which are made up principally of aliens, has been turned over to the Bureau of Inspection, as they are inspection matters.

Public Work

I desire to invite your attention to the fact that in the recodification of the Labor Law last year, old section 3, relative to public contracts, which was carried over in the new law as section 220, was so changed as to provide that a contractor violating any of the provisions of his contract required by the law, relative to prevailing rate of wages or the eight-hour provision, can collect the full amount of the contract, despite a possible breach of those provisions, except upon second conviction of a misdemeanor in connection therewith. I am of the opinion that this provision should be changed and that the rights of the contracting power, whether it be the State or a municipal corporation be fully restored to enable them to withhold the payment of monies after a single breach of the contract and further to require the withholding of any unpaid monies under such a public contract upon notice to the State or city authorities that the contract has been breached in one of these particulars. At the present time under section 223 of the law, the Industrial Commissioner is directed to submit the evidence of a violation of law or an evasion of its provisions to the public department or officer having charge of the execution of the contract and such public officer is thereupon directed to take the proper proceedings. Such proceedings, however, are not defined and under the provisions of subdivision 5 of section 220, such officer could not withhold any monies of a contractor, until a second conviction under the penal provisions of the law.

I desire further to recommend that section 220 of the Labor Law, relative to public work, be amended to provide that the eight-hour and prevailing rate of wage provisions be extended to persons employed by the State and municipal corporations or other political subdivisions thereof. At the present time the law relates only to contracts for public work and requires only that persons employed by a contractor upon public work be paid the prevailing rate of wages and that the eight-hour provision should apply. This would seem to be wholly inconsistent and at the last session of the Legislature a bill was passed in both houses that was designed to remedy this situation. The bill, however, was faultily drawn and would not have had the effect that its introducer intended and, therefore, did not meet with executive approval.

Another provision in regard to public work arises in connection with the opinion of the Attorney-General, given to me under date of May 18, 1921, in relation to the elimination of grade crossings where the work is carried on by a contract, the consideration of which is paid in part by a private corporation, in part by the State and in part by the local municipality. Under the Attorney-General's opinion the eight-hour and prevailing rate of wages provisions of section 220 do not apply to such a situation unless the State provides a fund out of which to reimburse the private party to the agreement for any increased cost that may be entailed by reason of the operation of these provisions. I recommend that section 220 be so amended as specifically to provide that public work whether done under contract of the State or municipal corporation solely or by one or both of them, together with a private person or corporation be made subject to the provisions in regard to eight hours work and the prevailing rate of wages.

BUREAU OF RESEARCH AND CODES

One of the most important and constructive functions of the Department is the preparation of rules and regulations for the conduct of industry, supplementing and amplifying the provisions of the law itself. Owing to the necessity of very careful study of conditions and trained observation of the dangers and hazards to be met in various industrial processes, it was deemed wise to confer upon the Department certain legislative powers. These legislative powers are conferred upon the Industrial Board, who may adopt or amend rules and regulations after public hearings thereon. Such rules and regulations constitute what is known as the Industrial Code, and they have the force and effect of law.

It is, of course, manifest that the members of the Board, with their manifold and exacting duties cannot in the first instance prepare the rules and regulations nor conduct the investigations necessary to ascertain the facts upon which such rules and regulations shall be based. The Commissioner, therefore, is authorized to propose rules and regulations for the consideration of the Board.

It has seemed to me that the research investigations that should precede the adoption of rules should be made under the same direction as the preparation of the codes themselves. Accordingly, I brought together in one bureau the research divisions and the code or rule-making division, where before such divisions were conducted under three different heads, entirely independent of each other. While ordinarily there should be a director of such an important bureau, free of other duties and responsibilities, I have felt it wise to utilize the especial qualifications of the present Deputy Commissioner to direct the work of this bureau, and he has acted as such director in addition to his other duties as deputy.

The two principal research divisions of the Department are the Division of Industrial Hygiene and the Division of Women in Industry.

In its original establishment in 1913 the Division of Industrial Hygiene was intended as a scientific research agency and not as an inspection or enforcement agency. The Division, however, in 1915, was attached to the Bureau of Inspection and came to be used almost exclusively as an adjunct of the inspection work. With such a vast field of usefulness for investigation and study of the peculiar dangers and hazards of different industrial processes, and the effect upon the human system of various metals, chemicals and gases, the Division has not heretofore realized its greatest function.

The Division of Women in Industry, likewise, should not indiscriminately investigate conditions, but its work should be directed along lines that will be most helpful in the preparation of codes for regulating the employment of women and children.

By bringing these divisions together under the same head and making their investigational work tie up closely with the rule-making authority, it is believed that the best results will be obtained.

The Division of Codes consists of the two Industrial Code Referees who are in active charge of the committees formulating the Industrial Code Rules. When the preparation of a set of new rules or amendment to existing rules is to be undertaken, the Commissioner appoints voluntary committees of experienced persons acquainted with the particular industry involved, both employers and workers. One of the Industrial Code Referees acts as chairman on each such committee. Such committees have as advisors the technical experts of the two Research Divisions attached to the bureau so that the information obtained during investigations can be made most useful in the preparation of the codes.

From the former Industrial Commission were inherited the fairly completed drafts of four codes, namely, a revision of Rule 2, relating to construction of factories, a set of rules relating to the construction of mercantile establishments, rules in regard to the artificial lighting of factories, and a revision of the rules relating to work under compressed air. The Industrial Board held hearings on these proposed rules in December, 1921, at Albany, Buffalo, Rochester, Syracuse and New York. Opportunity having been given to those desiring to protest against certain provisions to file memoranda, no action looking to final adoption has up to the present time been taken.

The preparation of other codes and the revision of some of the existing rules is now under way and investigations are being carried forward to ascertain the facts with regard to conditions affected by them.

CONCLUSION

In conclusion I desire to say that the work of the Department is well in hand and being maintained. I assert that, taken as a whole, no Department of the State Government is more industrious or maintains a more constant application to its business. Possibly the very human nature of the work and the intimate contacts with the people inspire to painstaking and loyal service.

I desire to express my thanks and appreciation to the members of the Industrial Board and to the bureau and division heads and to all the faithful employees of the Department for the hard work rendered and the loyal support given me in carrying out the great work of the Department for the benefit of the people of the State.

Respectfully submitted,

HENRY D. SAYER,

The Industrial Commissioner.

APPENDIX I.

GENERAL ORDER NO. 21

Pursuant to the authority conferred on me by Chapter 50, Laws of 1921, the organization of the Department of Labor is hereby prescribed as follows, effective July 1, 1921:

I. General Administration

The General Administration of the Department shall be exercised through the office of the Industrial Commissioner.

The Deputy Commissioner will perform such duties as may be assigned to him from time to time, and shall, in the absence of the Commissioner, be the Acting Commissioner, with full power and authority to do any acts or things which may be necessary and with the same effect as if done by the Commissioner. In addition, the Deputy Commissioner shall have general oversight and supervision, under the Commissioner, of the work of the Bureau of Inspection, the Bureau of Research and Codes, and the Bureau of Industrial Relations.

The Secretary of the Department shall be the custodian of the records of the Department, and shall act as Secretary to the Industrial Board. He shall be custodian of the Seal of the Department and shall use it to authenticate orders and records of the Department whenever required by law or by order of the Commissioner.

The Secretary will have immediate charge over the Division of Accounts and the Division of the Cashier. He shall have supervision over the stockroom and all requisitions for supplies or printing shall be made to his office. He shall also have supervision of the care and cleaning of the State building occupied by the Department in New York City.

The Chief Statistician is attached to the General Administration. He shall, under the direction of the Commissioner, collect and compile statistics and other information, and publish the same in such bulletins or otherwise as may be authorized.

The Official Bulletin of the Department shall be issued under the direction of the Commissioner and editor of the Bulletin shall publish such orders of the Commissioner and such rules and acts of the Industrial Board as may be directed by the Commissioner and such other information as may be authorized.

There are hereby created the positions of Assistant to the Commissioner. Such Assistants shall be assigned to cities in which there are offices of more than one bureau of the Department. One of such Assistants shall be assigned to Buffalo, one to Rochester and one to Syracuse. It shall be the duty of such Assistants to act as the direct representative of the Commissioner in such cities and to correlate and coordinate the work there of the different offices of the Department. They shall be responsible for the general conduct of the offices and shall have authority to require one office to assist in the work of another when occasion requires. They shall report to the Commissioner from time to time on the work of all offices within their jurisdiction, together with their recommendations. They shall also report directly to the various bureau heads matters arising in the offices under their care which relate solely to the work of the particular bureau.

The office of Counsel of the Department is hereby abolished, and the legal work of the Department will be conducted by the Attorney General or in such manner as he directs. Further orders will be issued hereafter more specifically dealing with the handling of legal matters in the Department.

II. Bureaus

The Department shall be organized in the following bureaus:

Bureau of Inspection.
Bureau of Workmen's Compensation.
Bureau of State Insurance Fund.
Bureau of Industrial Relations.
Bureau of Research and Codes.

Each bureau shall have such divisions as are set forth hereinafter or may hereafter be added.

III. Bureau of Inspection

The Bureau shall be in charge of a Director, and shall have the following divisions:

a. Division of Factory Inspection.
b. Division of Mercantile Inspection.
c. Division of Homework Inspection.
d. Division of Boiler Inspection.

The Division of Factory Inspection shall be under the immediate direction of a Chief Factory Inspector. There shall also be an Assistant Chief Factory Inspector, who shall perform such duties as the Chief Inspector shall designate. There shall be seven supervising inspection districts, the territory of each of which shall be as set forth in another order.

The Inspectors of this Division shall inspect all factories and other places to which the law applies, except as set forth elsewhere for other divisions of the bureau.

The Division of Mercantile Inspection shall be under the immediate direction of a Chief Mercantile Inspector. The inspectors of this Division shall inspect all mercantile establishments in cities except as may be otherwise ordered by the Director of the Bureau. They shall also enforce the provisions of the child labor law outside of factories and the elevator law in apartment houses, hotels and business offices.

The Division of Homework Inspection shall be under the immediate direction of the Chief of the Division of Homework Inspection, and the inspectors of the Division shall inspect tenement houses in which work for a factory is being done, and issue licenses therefor.

The Division shall from time to time issue a bulletin of all licensed tenement houses, as required by law.

The Chief of the Division shall in cooperation with the Chief of the Alien Division, have charge of the inspection of immigrant lodging houses.

The Division of Boiler Inspection shall be under the immediate direction of a Chief Boiler Inspector. The inspectors of this Division shall be known as boiler inspectors, and shall inspect boilers of 15 lbs. pressure and over. The Division shall also have charge of the records of boilers inspected by duly authorized inspectors of insurance companies and shall have supervision over the issuing of certificates of competency to such inspectors.

The former Bureau of Boilers and Explosives is hereby abolished and the records and work of such bureau relating to boilers are transferred to the Division of Boiler Inspection. The inspection and licensing of magazines for the storage of explosives is to be performed under the direction of the Director of the Bureau of Inspection.

IV. Bureau of Workmen's Compensation

The Bureau of Workmen's Compensation shall be under the immediate charge of the Director. It shall have charge of the receiving, docketing and filing of notices of accident and claims for compensation, the examination and preparation of such claims, the giving of notices in regard thereto, and the preparation of calendars for hearings on such claims, and all other matters incidental to the making of claims and the enforcement of awards.

There shall be in the Bureau ten referees, who shall, under the rules of the Industrial Board, hear and determine claims for compensation. The work of such referees is of a judicial nature, and they shall not be responsible for any part of the administrative work of the Bureau.

There shall be in the Bureau a Division of Claims Examination, which shall be under the immediate direction of a Chief Claim Examiner; and there shall be a Medical Division which shall be under the immediate direction of the Chief Medical Examiner.

There shall be a Division of Self Insurance, which shall be under the supervision of the Director of the Bureau, but which until further order shall continue in the Secretary's office and shall work in cooperation with the Secretary.

V. State Insurance Fund

There shall be a Bureau known as the State Insurance Fund, which shall be under the supervision of the Manager of the State Insurance Fund. There shall be an Assistant Manager, who shall perform such duties as the Manager shall direct and who in the absence of the Manager shall act as the head of the Bureau.

The State Fund shall have the following subdivisions, which shall not be regarded as independent divisions, but divisions of the work for office purposes:

Underwriting.
Accounting.
Claims Adjustment and Medical.
Safety Engineering.
Actuarial.

The Actuary shall be under the direction of the Manager of the State Fund as to the work of his division and its relation to the work of other divisions of the fund, but he shall be responsible, and report, directly to the Industrial Commissioner at his direction, on any question requiring actuarial judgment. The Actuary will also be required to make all computations in commuted cases for the information of the Bureau of Compensation, a proper distribution of the expense being made therefor.

VI. Bureau of Industrial Relations

There is hereby established a Bureau of Industrial Relations, which shall be under the supervision of the Director of Industrial Relations. The Bureau shall have the following divisions:

a. Division of Mediation and Arbitration.
b. Division of Employment.
c. Division of Aliens.

The Division of Mediation and Arbitration shall be under the immediate direction of a Chief Mediator, and shall take cognizance of industrial disputes and endeavor to effect an amicable settlement thereof.

The Division of Employment shall be under the immediate direction of the Chief of the Division of Employment and shall conduct the employment activities of the Department and endeavor to effect and carry out cooperative arrangements with local authorities, and shall also cooperate with the United States Employment Service.

The Division of Aliens shall be under the immediate direction of the Chief of the Alien Division. The Division shall cause to be made investigations of the conditions of Aliens in industry. The Division shall also in cooperation with the Bureau of Inspection, have charge of the issuance of licenses for immigrant lodging houses and of investigating complaints in regard to the same. It shall also have charge of claims of frauds or exploitations of aliens.

The Director of Industrial Relations shall also supervise the work of investigations of public contracts with reference to the payment of the prevailing rate of wages, hours of labor and alien labor.

VII. Bureau of Research and Codes

The Bureau of Research and Codes shall for the present be under the immediate supervision of the Deputy Commissioner who shall act as the head of the Bureau until further order of the Commissioner. The Bureau shall have the following divisions:

a. Division of Industrial Codes.
b. Division of Women in Industry.
c. Division of Industrial Hygiene.

In the Division of Industrial Codes there shall be two Industrial Code Referees and the Division shall have charge of preparing proposed rules and regulations relative to industry and industrial processes and any amendments or repeals of existing rules. Such rules shall be submitted to the Commissioner for consideration by him to be proposed by him to the Industrial Board for action. The Division shall also have charge of the preliminary investigation and hearing of variations from the provisions of the Labor Law with respect to new factory buildings.

The Division of Women in Industry shall carry forward the work heretofore undertaken by the Bureau of Women in Industry and shall investigate the conditions of women workers and all matters relating thereto and shall also make reports of such special investigations as in the judgment of the Commissioner may require rules or modifications of existing rules. Such reports shall then be considered by the Division of Industrial Codes.

The Division of Industrial Hygiene shall make investigations of industrial processes and special conditions in order to determine the hazards of such processes and make reports to be used as the basis for new rules or changes in existing rules. The division shall also cooperate with the Bureau of Inspection in making special investigations and in the examination of plans for new buildings and plans of special installation which may be ordered by the Commissioner.

(Signed) HENRY D. SAYER,
The Industrial Commissioner.

APPENDIX 2

FINANCIAL STATEMENT FOR PERIOD FROM JULY 1, 1920–JUNE 30, 1921

Appropriations:		
Unexpended cash balance July 1, 1920	$224,997 79	
Appropriation, Chapter 166, Laws of 1920, Part 1	2,276,225 00	
Appropriation, Chapter 604, Laws of 1920	55,000 00	
Appropriation, Chapter 539, Laws of 1920	5,000 00	
Appropriation, Chapter 582, Laws of 1920, Part 1	3,348 00	
Appropriation, Chapter 682, Laws of 1920, Part 2	13,054 32	
Lapsed balances revived, Chapter 177, Laws of 1919, Part 1	141 75	
Lapsed balances revived, Chapter 591, Laws of 1919	12 20	
Appropriation, Chapter 176, Laws of 1920, Part 2	8,149 86	
		$2,585,928 92
Payments Against Appropriations:		
July, 1920	$173,174 45	
August	180,541 23	
September	167,067 04	
October	194,895 69	
November	183,202 47	
December	213,361 75	
January, 1921	216,517 47	
February	192,518 07	
March	187,553 34	
April	183,739 59	
May	185,569 63	
June	178,201 35	
		$2,256,344 08
Cash Balance June 30, 1921		$329,584 84

SUMMARY OF CLASSIFIED EXPENSES JULY 1, 1920–JUNE 30, 1921

Personal Service		$1,714,662 45
Sheriff Fees		487 74
Traveling		159,257 61
Expressage		4,224 57
Printing		142,396 65
Supplies		45,559 76
Advertising		2,703 20
Postage		41,756 28
Rent		52,476 27
Telephone and Telegraph		20,658 83
General Plant Service		34,494 14
Furniture and Fixtures		38,711 67
Books, Subscriptions, etc		1,145 36
Repairs and Alterations to Building		7,148 48
Fuel, Light, Power and Water		10,763 55
Retired Veterans		2,250 00
		$2,278,696 59
State Fund Premium Income Appropriation:		
Personal Service — State Insurance Fund	$4,284 83	
Auditing Account — State Insurance Fund	3,015 63	
		7,300 46
		$2,285,997 05

STATEMENT OF CLASSIFIED EXPENSES BY BUREAUS AND DIVISIONS, JULY 1, 1920–JUNE 30, 1921

Administration:		
Personal Service	$52,826 59	
Traveling	5,210 31	
Expressage	23 89	
Printing	593 85	
Supplies	780 88	
Advertising	2 06	
Postage	466 76	
Rent	40 00	
Telephone and Telegraph	552 63	
General Plant Service	384 69	
Furniture and Fixtures	1,688 41	
Books, Subscriptions, etc	14 46	
Repairs to Building	9 00	
		$62,093 53
Legal Bureau:		
Personal Service	$55,419 74	
Sheriff Fees, etc	248 70	
Traveling	3,025 04	
Expressage	36 89	
Printing	1,613 28	
Supplies	1,576 77	
Advertising	2 92	
Postage	642 30	
Telephone and Telegraph	426 10	
General Plant Service	204 80	
Furniture and Fixtures	1,130 62	
Books, Subscriptions, etc	370 25	
Repairs to Building	9 00	
		64,706 41
Bureau of Secretary — New York:		
Personal Service	$28,430 96	
Sheriff Fees	91 57	
Traveling	829 96	
Expressage	138 34	
Printing	1,283 67	
Supplies	2,091 28	
Advertising	55 92	
Postage	513 80	
Rent	124 40	
Telephone and Telegraph	824 66	
General Plant Service	1,281 50	
Furniture and Fixtures	5,513 46	
Books, Subscriptions, etc	139 75	
Repairs to Building	69 70	
		41,888 97
Bureau of Secretary — Albany:		
Personal Service	$16,295 97	
Traveling	829 80	
Expressage	54 00	
Printing	443 02	
Supplies	1,818 09	
Postage	2,098 30	
Telephone and Telegraph	407 10	
General Plant Service	8 00	
Furniture and Fixtures	50 02	
Books, Subscriptions, etc	5 00	
		21,509 80
Division of Cashier:		
Personal Service	$16,109 66	
Traveling	60 34	
Expressage	8 68	
Printing	427 62	
Supplies	377 57	
Advertising	78	
Postage	1,070 71	
Rent	275 00	
Telephone and Telegraph	169 22	
General Plant Service	494 44	
Furniture and Fixtures	77 62	
Repairs to Building	41 11	
		19,107 75

Division of Accounts:		
Personal Service	$23,360 17	
Traveling	643 61	
Expressage	7 47	
Printing	1,109 38	
Supplies	503 33	
Advertising	1 19	
Postage	366 48	
Telephone and Telegraph	118 36	
General Plant Service	48 31	
Furniture and Fixtures	78 86	
Books, Subscriptions, etc	11 10	
Repairs to Building	11 50	
		26,259 76
Bureau of Compensation — New York:		
Personal Service	$21,878 28	
Sheriff Fees, etc	15 30	
Traveling	732 24	
Expressage	80 41	
Printing	3,016 70	
Supplies	2,664 12	
Advertising	6 58	
Postage	58 46	
Telephone and Telegraph	101 20	
General Plant Service	130 94	
Furniture and Fixtures	1,039 26	
Books, Subscriptions, etc	6 00	
Repairs to Building	9 00	
		29,738 49
Bureau of Compensation — Brooklyn:		
Personal Service	$7,177 80	
Traveling	878 65	
Expressage	11 81	
Printing	19 84	
Supplies	122 63	
Advertising	42	
Postage	239 00	
Rent	1,073 49	
Telephone and Telegraph	202 90	
General Plant Service	6 90	
Furniture and Fixtures	3 72	
		9,737 16
Bureau of Compensation — Albany:		
Personal Service	$39,857 45	
Traveling	3,499 17	
Expressage	113 42	
Printing	1,551 43	
Supplies	1,243 99	
Postage	2,134 20	
Rent	400 00	
Telephone and Telegraph	271 32	
General Plant Service	801 15	
Furniture and Fixtures	228 82	
Books, Subscriptions, etc	2 50	
		50,103 45
Bureau of Compensation — Syracuse:		
Personal Service	$32,529 86	
Sheriff Fees, etc	7 42	
Traveling	3,229 26	
Expressage	303 08	
Printing	1,861 57	
Supplies	1,320 47	
Advertising	38 12	
Postage	1,805 80	
Rent	2,616 95	
Telephone and Telegraph	143 85	
General Plant Service	47 77	
Furniture and Fixtures	1,263 18	
Books, Subcriptions, etc	15 00	
		45,182 33
Bureau of Compensation — Rochester:		
Personal Service	$31,859 70	
Traveling	2,252 90	
Expressage	415 33	
Printing	1,405 00	
Supplies	904 90	
Advertising	2 02	
Postage	1,859 86	
Rent	2,887 75	

Bureau of Compensation — Rochester (Continued):		
Telephone and Telegraph	613 42	
General Plant Service	332 76	
Furniture and Fixtures	363 63	
Books, Subscriptions, etc	6 50	
		42,964 27
Bureau of Compensation — Buffalo:		
Personal Service	$35,337 88	
Traveling	1,964 31	
Expressage	458 79	
Printing	2,096 26	
Supplies	981 68	
Advertising	14 05	
Postage	2,479 76	
Rent	3,877 00	
Telegraph and Telephone	571 47	
General Plant Service	2,636 58	
Furniture and Fixtures	1,495 14	
		51,912 92
Division of Claims — New York:		
Personal Service	$202,281 47	
Sheriff Fees	112 25	
Traveling	4,478 96	
Expressage	356 31	
Printing	34,401 26	
Supplies	8,032 25	
Advertising	20 01	
Postage	9,589 76	
Rent	21 00	
Telephone and Telegraph	990 89	
General Plant Service	211 58	
Furniture and Fixtures	1,279 82	
Books, Subscriptions, etc	95 00	
		261,770 56
Subdivision of Medical — (Compensation):		
Personal Service	$19,172 18	
Traveling	309 93	
Expressage	8 18	
Printing	157 49	
Supplies	809 50	
Advertising	1 67	
Postage	39 52	
Telephone and Telegraph	57 96	
General Plant Service	10 09	
Furniture and Fixtures	712 60	
Books, Subscriptions, etc	39 50	
		21,318 62
State Insurance Fund — New York:		
Personal Service	$158,382 68	
Sheriff Fees, etc	12 50	
Traveling	13,976 10	
Expressage	208 21	
Printing	10,213 47	
Supplies	7,494 79	
Postage	3,019 27	
Rent	1,698 55	
Telephone and Telegraph	832 80	
General Plant Service	27,027 88	
Furniture and Fixtures	8,969 29	
Books, Subscriptions, etc	286 40	
Repairs to Building	103 50	
		232,223 44
State Insurance Fund — Albany:		
Personal Service	$7,002 50	
Traveling	2,250 19	
Expressage	5 90	
Printing	45 00	
Supplies	225 16	
Postage	224 70	
Telephone and Telegraph	66 62	
Furniture and Fixtures	14 72	
		9,834 79
State Insurance Fund — Syracuse:		
Personal Service	$5,964 76	
Traveling	2,851 63	
Expressage	5 06	
Telephone and Telegraph	198 85	
		9,020 20

State Insurance Fund — Rochester:		
Personal Service	$4,165 00	
		4,165 00
State Insurance Fund — Buffalo:		
Personal Service	$6,862 50	
		6,862 50
State Insurance Fund — Binghamton:		
Personal Service	$937 50	
		937 50
Subdivision of Actuary:		
Personal Service	$19,148 35	
Traveling	14 80	
Expressage	1 08	
Printing	180 69	
Supplies	650 76	
Advertising	22	
Telephone and Telegraph	165 77	
Furniture and Fixtures	407 84	
		20,569 51
Subdivision of Inspection — (State Fund):		
Personal Service	$22,256 85	
Traveling	3,653 89	
Telephone and Telegraph	60 62	
		25,971 36
Subdivision of Medical — (State Fund):		
Personal Service	$6,310 00	
Telephone and Telegraph	54 90	
		6,364 90
Bureau of Inspection:		
Personal Service	$10,039 99	
Traveling	1,442 81	
Expressage	97	
Advertising	3 49	
Telephone and Telegraph	59 56	
General Plant Service	2 45	
Furniture and Fixtures	30 86	
		11,580 13
Division of Factory Inspection — New York:		
Personal Service	$178,408 04	
Traveling	22,917 89	
Expressage	185 13	
Printing	11,165 78	
Supplies	2,147 88	
Advertising	4 83	
Postage	7,547 71	
Rent	21 00	
Telephone and Telegraph	605 87	
General Plant Service	57 80	
Furniture and Fixtures	6,289 14	
Books, Subscriptions, etc	10 50	
Repairs to Building	76 50	
		229,438 07
Division of Factory Inspection — Albany:		
Personal Service	$47,326 64	
Traveling	9,294 83	
Expressage	45 16	
Printing	2,538 65	
Supplies	1,032 64	
Postage	994 78	
Telephone and Telegraph	306 08	
General Plant Service	1 63	
Furniture and Fixtures	319 05	
Books, Subscriptions, etc	1 25	
		61,860 71
Division of Factory Inspection — Utica:		
Personal Service	$24,195 62	
Traveling	7,920 86	
Expressage	19 40	
Printing	25 25	
Supplies	113 47	
Rent	388 43	
Telephone and Telegraph	189 25	
Furniture and Fixtures	234 53	
		33,086 81

Division of Factory Inspection — Rochester:

Personal Service	$21,697 05	
Traveling	5,534 76	
Expressage	23 21	
Printing	72 89	
Supplies	78 79	
Advertising	56	
Postage	242 00	
Rent	554 75	
Telephone and Telegraph	171 11	
General Plant Service	4 49	
Furniture and Fixtures	478 32	
		28,857 93

Division of Factory Inspection — Buffalo:

Personal Service	$25,262 70	
Traveling	4,640 27	
Expressage	23 07	
Printing	121 61	
Supplies	80 19	
Advertising	12	
Postage	188 00	
Rent	572 00	
Telephone and Telegraph	125 62	
General Plant Service	2 85	
Furniture and Fixtures	62 65	
Books, Subscriptions, etc	4 05	
		31,083 13

Division of Homework Inspection:

Personal Service	$44,072 32	
Traveling	4,947 05	
Expressage	18 13	
Printing	3,837 02	
Supplies	186 07	
Advertising	44	
Postage	878 17	
Telephone and Telegraph	131 08	
General Plant Service	18 24	
Furniture and Fixtures	211 15	
		54,299 67

Division of Mercantile Inspection:

Personal Service	$79,992 84	
Traveling	12,482 79	
Expressage	59 61	
Printing	4,342 88	
Supplies	524 03	
Advertising	97	
Postage	284 53	
Telephone and Telegraph	130 47	
General Plant Service	54 31	
Furniture and Fixtures	145 27	
		98,017 70

Division of Industrial Hygiene:

Personal Service	$35,799 75	
Traveling	6,634 40	
Expressage	14 92	
Printing	667 80	
Supplies	661 04	
Advertising	1 23	
Postage	153 02	
Telephone and Telegraph	123 75	
General Plant Service	71 65	
Furniture and Fixtures	473 21	
		44,600 77

Subdivision of Engineering:

Personal Service	$5.943 84	
Traveling	828 74	
Expressage	3 28	
Printing	68 94	
Supplies	249 18	
Postage	71 09	
Telephone and Telegraph	58 41	
General Plant Service	1 00	
Furniture and Fixtures	8 94	
Books, Subscriptions, etc	4 75	
		7,238 17

Bureau of Employment — New York (Administrative office):

Personal Service	$13,206 21	
Traveling	982 74	
Expressage	536 09	
Printing	19,021 66	
Supplies	568 66	
Advertising	24 24	
Postage	86 34	
Rent	1 66	
Telephone and Telegraph	421 94	
General Plant Service	18 15	
Furniture and Fixtures	69 71	
		34,937 40

Bureau of Employment — Manhattan (General):

Personal Service	34,339 81	
Traveling	269 13	
Expressage	73 03	
Printing	75 88	
Supplies	109 75	
Advertising	137 45	
Rent	4,912 41	
Telephone and Telegraph	2,103 07	
General Plant Service	5 55	
Furniture and fixtures	4 00	
		42,030 08

Bureau of Employment — Manhattan (Unskilled):

Personal Service	$9,966 91	
Traveling	36 91	
Expressage	7 84	
Printing	2 75	
Supplies	28 00	
Rent	1,165 22	
Telephone and Telegraph	380 81	
Furniture and Fixtures	405 23	
		11,993 67

Bureau of Employment — City Hall:

Personal Service	$1,604 35	
Telephone and Telegraph	147 81	
		1,752 16

Bureau of Employment — Negro Branch:

Personal Service	$9,838 63	
Traveling	11 90	
Expressage	8 65	
Supplies	261 94	
Rent	2,701 83	
Telephone and Telegraph	530 02	
General Plant Service	17 95	
Furniture and Fixtures	125 00	
Books, Subscriptions, etc	1 35	
		13,497 27

Bureau of Employment — Bronx:

Personal Service	$15,040 54	
Traveling	57 57	
Expressage	4 52	
Printing	33 25	
Supplies	193 40	
Rent	2,558 87	
Telephone and Telegraph	682 78	
Furniture and Fixtures	2 82	
		18,573 75

Bureau of Employment — Brooklyn:

Personal Service	$26,238 81	
Traveling	251 70	
Expressage	21 46	
Printing	68 53	
Supplies	256 57	
Advertising	33 30	
Rent	3,525 45	
Telephone and Telegraph	1,393 92	
General Plant Service	5 98	
Furniture and Fixtures	84 68	
		31,880 40

Bureau of Employment — Albany:

Personal Service	$14,455 01	
Traveling	244 42	
Expressage	37 90	
Printing	23 99	
Supplies	468 55	
Advertising	263 06	
Postage	19 00	
Rent	13 00	
Telephone and Telegraph	428 47	
General Plant Service	6 11	
Furniture and Fixtures	10 55	
		15,970 06

Bureau of Employment — Syracuse:

Personal Service	$25,774 19	
Traveling	165 88	
Expressage	138 39	
Printing	45 61	
Supplies	271 20	
Advertising	458 67	
Postage	2 00	
Rent	2,770 30	
Telephone and Telegraph	541 11	
General Plant Service	42 65	
Furniture and Fixtures	816 68	
		31,026 68

Bureau of Employment — Rochester:

Personal Service	$22,073 09	
Traveling	105 60	
Expressage	17 68	
Printing	59	
Supplies	255 31	
Advertising	324 79	
Rent	4,751 96	
Telephone and Telegraph	812 13	
General Plant Service	29 53	
Furniture and Fixtures	121 11	
		28,491 79

Bureau of Employment — Buffalo:

Personal Service	$20,677 58	
Traveling	39 23	
Expressage	28 36	
Supplies	125 07	
Advertising	705 44	
Rent	3,467 48	
Telephone and Telegraph	1,072 32	
General Plant Service	11 36	
Furniture and Fixtures	240 12	
		26,366 96

Bureau of Employment — Utica:

Personal Service	$5,804 49	
Traveling	22 28	
Expressage	5 99	
Supplies	9 90	
Advertising	244 32	
Rent	1,850 50	
Telephone and Telegraph	231 95	
Books, Subscriptions, Etc	8 00	
		8,177 43

Bureau of Employment — Binghamton:

Personal Service	7,159 17	
Traveling	88 67	
Expressage	13 05	
Supplies	54 65	
Advertising	68 99	
Rent	1,400 02	
Telephone and Telegraph	433 35	
Furniture and Fixtures	53 55	
Books, Subscriptions, Etc	9 00	
		9,280 45

Bureau of Employment — Elmira:

Personal Service	$4,589 41	
Traveling	56 60	
Expressage	7 58	
Printing	7 00	
Supplies	2 50	
Advertising	75 69	
Rent	2,491 12	
Telephone and Telegraph	253 03	
Books, Subscriptions, Etc	15 00	
		7,497 93

Bureau of Employment — Jamestown:

Personal Service	$3,179 92	
Traveling	20 44	
Expressage	6 29	
Advertising	36 55	
Rent	997 95	
Telephone and Telegraph	85 59	
General Plant Service	1 50	
Furniture and Fixtures	50	
		4,327 74

Bureau of Employment — Niagara Falls:

Personal Service	$3,264 93	
Traveling	15 28	
Expressage	4 37	
Supplies	14 95	
Advertising	1 98	
Rent	251 87	
Telephone and Telegraph	116 46	
		3,669 84

Bureau of Employment — Schenectady:

Personal Service	$6,070 46	
Expressage	10 86	
Printing	2 75	
Supplies	108 05	
Advertising	74 40	
Rent	1,711 00	
Telephone and Telegraph	444 72	
General Plant Service	5 00	
Furniture and Fixtures	183 83	
		8.611 07

Bureau of Employment — Watertown:

Personal Service	$6,176 52	
Traveling	81 78	
Expressage	45 90	
Printing	6 00	
Supplies	49 33	
Advertising	37 83	
Rent	685 38	
Telephone and Telegraph	184 40	
Furniture and Fixtures	4 50	
		7,271 64

Bureau of Employment — Yonkers:

Personal Service	$7,286 33	
Traveling	223 52	
Expressage	5 99	
Printing	2 02	
Supplies	32 50	
Advertising	14 00	
Rent	1,084 28	
Telephone and Telegraph	333 29	
General Plant Service	02	
Furniture and Fixtures	53	
Books, Subscriptions, Etc	7 00	
		8,989 48

Bureau of Employment — Dunkirk:

Personal Service	$1,105 00	
Expressage	1 18	
Telephone and Telegraph	45 26	
		1,151 44

Bureau of Employment — Newburgh:

Rent	$80 00	
		80 00

Bureau of Statistics and Information:

Personal Service	$4,500 00	
Traveling	792 63	
Expressage	20 05	
Printing	16,999 97	
Supplies	34 00	
Rent	809 10	
Telephone and Telegraph	167 64	
General Plant Service	2 75	
		23,326 14

General Labor Statistics — Albany:		
Personal Service	$29,039 96	
Traveling	556 93	
Expressage	2 13	
Printing	4,919 41	
Supplies	620 70	
Advertising	04	
Postage	1,778 55	
Telephone and Telegraph	199 17	
General Plant Service	33 60	
Furniture and Fixtures	70 89	
		37,221 38
General Labor Statistics — New York:		
Personal Service	$12,148 64	
Traveling	132 98	
Expressage	4 34	
Printing	44 00	
Supplies	133 79	
Advertising	24	
Postage	27 34	
Telephone and Telegraph	55 47	
Furniture and Fixtures	57 61	
		12,604 41
Division of Industrial Accidents and Diseases:		
Personal Service	$13,209 10	
Expressage	139 69	
Printing	278 76	
Supplies	476 50	
Advertising	07	
Postage	41 50	
Telephone and Telegraph	7 78	
General Plant Service	80 14	
Furniture and Fixtures	715 24	
		14,948 78
Division of Special Investigations:		
Personal Service	$3,091 65	
Supplies	53 71	
Telephone and Telegraph	1 73	
Books, Subscriptions, Etc	34 50	
		3,181 59
Division of Bulletins and Publications:		
Personal Service	$3,070 83	
Traveling	1,852 68	
Expressage	2 00	
Printing	10,119 52	
Supplies	28 55	
Postage	1,921 94	
Telephone and Telegraph	50 53	
		17,046 05
Bureau of Industries and Immigration — New York:		
Personal Service	$18,509 64	
Traveling	4,144 02	
Expressage	21 18	
Printing	547 02	
Supplies	696 32	
Advertising	1 20	
Postage	164 20	
Telephone and Telegraph	121 77	
General Plant Service	30 32	
Furniture and Fixtures	208 75	
Books, Subscriptions, etc	9 50	
		24,453 92
Bureau of Industries and Immigration — Buffalo:		
Personal Service	$2,280 00	
Expressage	10 09	
Supplies	34 71	
Postage	5 00	
Rent	45 00	
Telephone and Telegraph	26 50	
		2,401 30

Bureau of Boilers and Explosives:

Personal Service	$28,682 74	
Traveling	16,332 66	
Expressage	8 83	
Printing	1,877 82	
Supplies	497 02	
Postage	518 40	
Telephone and Telegraph	71 90	
General Plant Service	9 00	
Furniture and Fixtures	124 29	
Books, Subscriptions, etc	42 00	
		48,164 66

Bureau of Mediation and Arbitration:

Personal Service	$11,890 00	
Traveling	1,878 87	
Expressage	3 81	
Printing	77 68	
Supplies	40 35	
Postage	22 62	
Telephone and Telegraph	71 84	
Furniture and Fixtures	172 37	
		14,157 54

Bureau of Mediation and Arbitration — New York:

Personal Service	$11,250 51	
Traveling	1,568 64	
Expressage	3 77	
Printing	233 71	
Supplies	101 67	
Advertising	34	
Postage	28 71	
Telephone and Telegraph	114 54	
General Plant Service	14	
Furniture and Fixtures	13 27	
		13,315 30

Bureau of Industrial Code:

Personal Service	$11,465 01	
Traveling	1,251 91	
Expressage	22 50	
Printing	1,005 55	
Supplies	162 24	
Advertising	42 07	
Postage	89 35	
Rent	25 85	
Telephone and Telegraph	117 85	
General Plant Service	13 79	
Furniture and Fixtures	128 05	
		14,323 67

Women in Industry:

Personal Service	$11,164 61	
Traveling	710 12	
Expressage	5 06	
Printing	1,758 74	
Supplies	200 17	
Advertising	62	
Postage	133 35	
Telephone and Telegraph	113 00	
General Plant Service	3 67	
Furniture and fixtures	103 46	
Books, Subscriptions, etc	7 00	
		14,199 80

Post Office:

Personal Service	$2,475 94	
Expressage	40	
Printing	5 21	
Supplies	77 28	
Advertising	10	
Telephone and Telegraph	55 34	
General Plant Service	8 10	
Furniture and Fixtures	42 51	
		2,664 88

Stock Room — Albany:

Expressage	$92 35	
Printing	1,905 61	
General Plant Service	3 75	
Furniture and Fixtures	205 00	
		2,206 71

Building Care and Cleaning:		
Personal Service	$28,275 85	
Traveling	27 13	
Expressage	239 01	
Printing	13 27	
Supplies	3,420 96	
Advertising	21	
Rent	625 70	
Telephone and Telegraph	110 00	
General Plant Service	373 27	
Furniture and Fixtures	2,177 29	
Repairs and Alterations to Building	6,819 17	
Fuel, Light, Power and Water	10,763 55	
		52,845 41
Pensioners:		
Personal Service	$2,250 00	
		2,250 00
		$2,278,696 59
State Fund Premium Income Appropriation:		
Auditing Accounts of State Insurance Fund	$3,015 63	
Personal Service, Division of State Insurance Fund	3,848 14	
Personal Service, Subdivision of Medical, State Insurance Fund	436 69	
		7,300 46
		$2,285,997 05

APPENDIX 3

APPORTIONMENT OF PERSONAL SERVICE APPROPRIATION AS OF PAYROLL, JULY 1-15, 1921

General Administration, Chapter 340, 1921:

Name	Title	Amount
H. D. Sayer	Industrial Commissioner	$8,000
J. D. Higgins	Member of Industrial Board	8,000
R. L. Whitney	Member of Industrial Board	8,000
R. H. Curran	Member of Industrial Board	8,000
M. H. Christopherson	Deputy Commissioner	7,000
M. G. Merrill	Secretary to Commissioner	2,500
A. Goldsamt	Assistant to Commissioner	3,000
W. A. Marakle	Assistant to Commissioner	3,000
Vacancy	Assistant to Commissioner	3,000
S. F. Northrup	Director of Industrial Relations	5,000
F. E. Brooks	Stenographer	1,600
L. T. Hartman	Stenographer	1,600
M. A. Roberts	Stenographer	1,600
I. Aronstein	Stenographer	1,600
E. Rhuda	Stenographer	1.020
E. Samuels	Junior Clerk	720
J. Marron	Junior Clerk	720
J. A. Young	Attendant	1.400
		$65.760

Office of Secretary:

Name	Title	Amount
C. A. Meeker	Secretary	$4,500
E. LaRose	Assistant to Secretary	2,100
M. J. Wallace	Assistant Secretary	3.500
M. M. Simmons	Chief Hearing Stenographer	2,400
L. B. Siegel	Hearing Stenographer	2,100
T. L. Longley	Hearing Stenographer	2,100
E. G. Dargin	Hearing Stenographer	2.100
A. G. Bendt	Hearing Stenographer	1.950
D. Gottlieb	Hearing Stenographer	1.800
A. Goldsamt	Hearing Stenographer	1,800
M. Blostein	Hearing Stenographer	1.800
M. Weintraub	Hearing Stenographer	1,800
J. O'Donnell	Hearing Stenographer	1.800
H. Krett	Hearing Stenographer	1.800
R. L. Gilbert	Hearing Stenographer	1.800
H. D. Van Benthuysen	Hearing Stenographer	1.650
L. Bradley	Stenographer	1,600
F. Jurkowitz	Senior Stenographer	1,500
E. Alt	Senior Stenographer	1.500
H. Ehrlich	Stenographer	1.440
F. Bornheim	Stenographer	1.320
M. O'Flaherty	Stenographer or Typewriter-Copyist	960
A. Jordan	Chief Mail Clerk	1,500
H. G. Wilson	Telephone Operator	1.200
L. M. Woods	Telephone Operator	1.200
Vacancy	Telephone Operator	900
A. J. Busk	Multigraph Operator	1,200
I. V. Nee	Multigraph Operator	1,100
D. Cahill	Laborer	1,200
B. J. Larity	Laborer	1.200
R. Smith	Laborer	1.000
W. Oakley	Stock Clerk	1,200
A. O. Pauly	Bookkeeper or Clerk	1,200
S. Murphy	Junior Clerk	720
P. Hanlon	Junior Clerk	720
A. Phillips	Junior Clerk	720
Vacancy	Junior Clerk	720
		$59.100

Office of Secretary — Albany:

Name	Title	Amount
Vacancy	Assistant Secretary	$3.500
H. B. Whitney	Confidential Agent	2,400
C. Woodard	Senior Stenographer	1.500
J. Finnan	Stenographer	1,500
J. H. McCann	Supervisor of Printing	2.000
M. Devlin	Multigraph operator	1,200
W. F. Horan	Clerk	1,140
M. Wildermuth	Telephone Operator	1,050
L. G. Shanahan	Junior Clerk	600
		$14,890

Division of Accounts:

Name	Title	Amount
G. H. Tobler	Accountant	$2,000
E. C. Marcellus	Accountant	1,800
M. A. Siegel	Junior Accountant	1,500
G. F. Fosket	Junior Accountant	1,500
M. Knispel	Junior Accountant	1,500
K. U. McLaughlin	Stenographer	1,440
J. M. Ember	Stenographer or Clerk	1,200
J. T. Walsh	Clerk	1,200
Vacancy	Stenographer	900
B. D. Salant	File Clerk	1,200
		$14,240

Division of Cashier:

A. F. Pentz	Cashier	$3,750
M. T. Howard	Assistant Cashier	2,250
M. J. Clark	Bookkeeper	1,200
J. DeCicco	File Clerk	1,200
H. Deutsch	Stenographer	1,080
		$9,480

Office of Chief Statistician:

Administrative Division:

E. B. Patton	Chief Statistician	$4,500
E. M. Devanna	Stenographer	1,600
		$6,100

Division of Special Investigations:

Vacancy	Chief of Division	$2,800
L. G. McConachie	Expert	2,200
P. J. B. Haegy	Librarian	1,700
L. U. Bussey	Stenographer	1,080
		$7,780

Division of Accidents and Diseases:

T. K. Lewis	Chief of Division	$2,800
J. F. Bolin	Special Agent	2,000
K. Shaffer	Clerk	2,000
C. E. Rosenbloom	Clerk or Hearing Stenographer	1,650
J. J. Angelum	Statistical Clerk	1,600
C. W. Gray	Bookkeeper or Clerk	1,500
C. I. Walsh	Junior Statistical Clerk	1,080
E. M. Lear	Junior Statistical Clerk	960
H. E. Dignan	Junior Statistical Clerk	840
P. Woodin	Junior Statistical Clerk	840
H. E. McGraw	Junior Statistical Clerk	840
M. C. Donohue	Junior Statistical Clerk	840
		$16,950

Division of General Labor Statistics:

H. V. Roelse	Chief of Division	$2,800
J. Perlman	Statistician	2,000
G. Manville	Statistician	1,800
E. A. Borrman	Statistician	1,800
M. McGarry	Statistical Clerk	1,500
A. Maney	Statistical Clerk	1,200
L. Liebich	Statistical Clerk	1,200
J. E. Smith	Junior Statistical Clerk	1,080
L. K. Haverly	Comptometer Operator	1,000
M. Mesick	Comptometer Operator	900
K. Bosher	Stenographer	1,140
		$16,420

New York Office:

G. A. Stevens	Assistant Chief Statistician	$3,500
T. J. Hammill	Special Agent	2,250
T. F. Cusack	Statistician	1,800
M. E. Lonigan	Statistician	1,800
J. Meyerson	Stenographer	1,200
		$10,550

Name	Title	Amount
Buffalo Office:		
H. Meyerson	Statistician	$2,000
Rochester Office:		
H. S. Belman	Statistician	$1,800
Syracuse Office:		
Vacancy	Statistician	$1,800
Division of Bulletins and Publications:		
V. T. Holland	Editor of Official Bulletin	$3,000
Building, Care and Cleaning:		
P. J. Honan	Supervisor	$3,000
E. G. Swift	Engineer	2,340
C. J. Dempsey	Fireman	1,716
L. McAllister	Fireman	1,716
J. J. O'Connor	Fireman	1,716
B. O'Donnell	Fireman	1,500
D. J. Buckley	Elevatorman	1,200
W. H. McDonald	Elevatorman	1,200
G. McNamara	Elevatorman	1,200
H. Grimes	Elevatorman	1,200
H. J. Hayes	Laborer	1,200
W. O'Shaughnessy	Laborer	1,200
P. J. Cullinan	Laborer	1,080
T. Farrell	Watchman	1,080
M. Branigan	Cleaner	600
J. Hitzel	Cleaner	600
A. Dunn	Cleaner	600
E. Klemballa	Cleaner	600
M. J. Hughes	Cleaner	600
J. Hofmann	Cleaner	600
B. Lybere	Cleaner	600
M. Brady	Cleaner	600
M. Clavens	Cleaner	600
Vacancy	Cleaner	600
		$27,348
Legal Division:		
I. Frank	Law Clerk	$1,800
F. Newbold	Stenographer	1,800
T. F. Graham	Record Clerk	1,200
A. J. Severin	Messenger	1,000
		$5,800
Bureau of Inspection:		
J. L. Gernon	Director Bureau of Inspection	$6,000
W. E. Lockrow	Clerk and Stenographer	1,800
A. T. Higgins	Stenographer	1,080
		$8,880
Division of Factory Inspection:		
L. A. Havens	Chief Factory Inspector	$4,000
H. L. Schnur	Assistant Chief Factory Inspector	3,500
E. E. J. Pierce	Supervising Factory Inspector	3,000
W. H. Donohue	Supervising Factory Inspector	3,000
M. J. Flanagan	Supervising Factory Inspector	3,000
S. J. Smith	Factory Inspector	2,400
D. J. Hanlon	Factory Inspector	2,400
J. Hofman	Factory Inspector	2,400
A. Sirota	Factory Inspector	2,400
W. H. Rich	Factory Inspector	2,400
J. J. Murphy	Factory Inspector	2,400
T. F. Woods	Factory Inspector	2,400
L. F. Foster	Factory Inspector	2,400
A. C. Hannon	Factory Inspector	2,400
J. M. McKee	Factory Inspector	2,100
A. Lang	Factory Inspector	2,100
J. J. Hanlon	Factory Inspector	2,100
G. L. Horn	Factory Inspector	2,100

Division of Factory Inspection (Continued):

Name	Title	Amount
J. F. Morgan	Factory Inspector	2,100
A. A. Farrell	Factory Inspector	2,100
W. J. Schmitt	Factory Inspector	2,100
F. J. Conlan	Factory Inspector	2,100
A. A. Levin	Factory Inspector	2,100
J. J. McKegney	Factory Inspector	2,100
M. J. OC. Olsen	Factory Inspector	2,100
M. G. Davie	Factory Inspector	2,100
G. W. McMein	Factory Inspector	2,100
I. L. Dunn	Factory Inspector	2,100
W. H. Geoghegan	Factory Inspector	1,800
J. Bollinger	Factory Inspector	1,800
F. F. Spillman	Factory Inspector	1,800
C. W. Schmitt	Factory Inspector	1,800
J. V. MacCormac	Factory Inspector	1,800
W. F. Clasen	Factory Inspector	1,800
F. Weber	Factory Inspector	1,800
E. J. Schwall	Factory Inspector	1,800
L. Rosenbluth	Factory Inspector	1,800
H. L. Reid	Factory Inspector	1,800
J. F. McNevin	Factory Inspector	1,800
J. Bruno	Factory Inspector	1,800
H. Graf	Factory Inspector	1,500
J. Potts	Factory Inspector	1,500
T. J. Roche	Factory Inspector	1,500
J. J. Sliney	Factory Inspector	1,500
J. Werden	Factory Inspector	1,500
P. Piliero	Factory Inspector	1,500
W. D. Goodall	Tunnel Inspector	2,000
G. Werner	Mine and Tunnel Inspector	2,000
R. W. Jones	Stenographer	1,440
J. Monahan	Stenographer	1,200
S. Voss	Stenographer	900
F. Hess	Stenographer	900
F. Erickson	Stenographer	900
R. Schwimmer	Stenographer	900
M. Shields	Stenographer	900
A. H. Siegel	Stenographer or Typewriter-Copyist.	1,100
A. Bolger	Stenographer or Typewriter-Copyist.	1,100
B. Orgel	Stenographer or Typewriter-Copyist.	900
R. R. Evans	Clerk	1,500
A. L. Greene	Clerk	1,200
M. Conroy	Clerk	900
J. Krauss	File Clerk	1,200
L. Feldman	File Clerk	1,100
L. M. Murphy	File Clerk	900
J. Lucas		
		$120,640

Albany:

Name	Title	Amount
G. C. Daniels	Supervising Factory Inspector	$3,000
W. E. Tibbs	Factory Inspector	2,400
P. Shea	Factory Inspector	2,400
J. P. Harsha	Factory Inspector	2,400
F. S. Nash	Factory Inspector	2,400
C. E. Reid	Factory Inspector	2,100
J. McDowell	Factory Inspector	1,800
S. F. Willis	Mercantile Inspector	2,400
E. C. Hinman	Mercantile Inspector	2,100
J. T. Kelly	Mercantile Inspector	2,100
A. J. Smith	Mercantile Inspector	2,100
G. H. Jones	Mercantile Inspector	1,800
K. B. Mathis	Mercantile Inspector	1,800
W. W. Jones	Mine Inspector	2,000
P. J. Brennan	Clerk and Hearing Stenographer	1,900
J. J. Armstrong	Stenographer	1,440
A. M. McCann	Stenographer	1,440
J. A. Dillon	Stenographer	1,440
J. M. Sammon	Stenographer	1,320
L. M Penney	Stenographer	1,140
A. J. O'Neill	Clerk	2,200
E. J. Jarvis	Clerk	1,440
J. M. Wickham	Clerk	1,440
K. Fitzpatrick	Clerk	900
		$45.460

Name	Title	Amount
Buffalo:		
W. F. Jordan	Supervising Factory Inspector	$3,000
C. G. Branch	Factory Inspector	2,400
C. E. Corby	Factory Inspector	2,100
M. L. Carbon	Mercantile Inspector	1,800
G. Rosquist	Mercantile Inspector	1,800
W. M. Irwin	Mercantile Inspector	1,800
F. E. Brindler	Stenographer	1,440
		$14,340
Rochester:		
W. R. Erskine	Supervising Factory Inspector	$3,000
J. W. Ireland	Factory Inspector	2,100
W. S. Wollaver	Factory Inspector	2,100
W. Percival	Factory Inspector	2,100
G. B. Runyan	Factory Inspector	1,800
J. C. Ellrodt	Factory Inspector	1,500
M. E. Buckley	Stenographer	1,200
		$13,800
Utica:		
J. O'Rourke	Factory Inspector	$2,400
E. M. Wilber	Factory Inspector	2.400
J. R. Willis	Factory Inspector	2.400
J. M. Derby	Factory Inspector	2,100
J. J. A. Magee	Factory Inspector	2,100
S. W. Simmons	Factory Inspector	1,800
J. W. Willis	Factory Inspector	1,500
L. Barrett	Factory Inspector	1,500
		$16,200
Division of Mercantile Inspection:		
C. B. Ash	Chief of Division	$4,000
F. L. Fisher	Factory Inspector	2,400
J. Lowe	Factory Inspector	2,100
J. H. Price	Factory Inspector	2.100
G. W. Davison	Factory Inspector	1,800
G. Kloer	Factory Inspector	1,800
A. Horenburger	Factory Inspector	1,800
G. W. Stoyell	Factory Inspector	1,800
C. W. Johnson	Factory Inspector	1,800
G. Purtell	Factory Inspector	1.500
J. F. Tewey	Mercantile Inspector	2.100
N. Hertzberger	Mercantile Inspector	2.100
G. Fay	Mercantile Inspector	2,100
C. P. Houser	Mercantile Inspector	2.100
K. Giblin	Mercantile Inspector	1.800
J. B. Geary	Mercantile Inspector	1.800
L. Davis	Mercantile Inspector	1.800
J. Moriarty	Mercantile Inspector	1.800
T. McGurty	Mercantile Inspector	1.800
C. Dowd	Mercantile Inspector	1.800
M. L. Congdon	Mercantile Inspector	1.500
B. Di Francisco	Stenographer	1,080
M. Israel	Stenographer or Typewriter-Copyist	1,080
L. Tighe	Stenographer or Typewriter-Copyist	900
A. Schlesinger	Clerk	1,650
J. A. Burke	Clerk	1.440
		$47,950
Homework Inspection:		
D. O'Leary	Chief of Division	$3,250
F. C. Wilkinson	Factory Inspector	2.400
J. M. Bolin	Factory Inspector	2.100
K. L. Kane	Factory Inspector	2,100
J. T. Nelligan	Factory Inspector	2,100
J. Travers	Factory Inspector	1,800
A. Bell	Factory Inspector	1.800
J. A. Reilly	Factory Inspector	1,800
C. M. Weiss	Factory Inspector	1,800
T. J. Delaney	Factory Inspector	1.800
J. Cummins	Stenographer	1,140
E. F. Horgan	Clerk	1,200
		$23,290

Division of Industrial Hygiene:

Name	Title	Amount
J. Vogt	Chemical Engineer	$3,750
B. Bell	Medical Inspector of Factories	3,000
C. T. Graham-Rogers	Medical Inspector of Factories	3,000
N. Schwartz	Factory Inspector	2,100
J. J. Sullivan	Factory Inspector	2,400
R. Northrup	Factory Inspector	2,400
G. C. Ward	Factory Inspector	2,400
S. C. Wilson	Factory Inspector	2,100
W. E. Pettit	Factory Inspector	2,100
J. F. Grant	Factory Inspector	1,800
C. Cohen	Stenographer	1,440
		$26,490

Division of Engineering — Albany:

W. J. Picard	Assistant Engineer	$2,750
O. F. Horle	Stenographer	1,500
		$4,250

Division of Boiler Inspection:

W. H. Furman	Chief Boiler Inspector	$3,000
J. D. Eberhardt	Boiler Inspector	1,800
E. Hall	Boiler Inspector	1,800
J. H. Flaherty	Boiler Inspector	1,800
J. E. Cullum	Boiler Inspector	1,650
W. Hill	Boiler Inspector	1,650
J. H. Forrester	Boiler Inspector	1,650
L. R. Long	Boiler Inspector	1,500
S. A. Bowen	Boiler Inspector	1,500
J. J. Lynch	Boiler Inspector	1,500
J. J. Daly	Chief Clerk and Hearing Stenographer	1,900
C. Munger	Stenographer	1,140
F. J. Murray	Clerk	1,320
J. F. Miller	Clerk	1,080
		$23,290

Division of Women In Industry:

N. Swartz	Chief of Division	$3,000
F. Hilles	Investigator	1,800
S. Freiberger	Stenographer	1,500
		$6,300

Bureau of Industrial Code:

T. C. Eipper	Industrial Code Referee	$4,000
R. J. Cullen	Industrial Code Referee	4,000
M. L. Honner	Stenographer	1,600
		$9,600

Bureau of Industrial Relations — Division of Employment:

D. S. Flynn	Chief of Division	$4,250
F. B. McCarthy	Assistant Superintendent	2,000
Vacancy	Stenographer	900
		$7,150

Albany:

D. A. Hausmann	Superintendent	$2,400
E. H. Newmann	Assistant Superintendent	1,500
T. J. McCabe	Assistant Superintendent	1,500
H. Poe	Assistant Superintendent	1,440
A. D. Heidrich	Assistant Superintendent	1,140
H. Campbell	Supervisor	1,700
L. M. Benson	Assistant Superintendent	1,320
H. C. Coffey	Stenographer	1,080
		$12,080

Brooklyn:

Name	Title	Amount
J. P. Boyle	Superintendent	$2,400
R. T. Lockley	Assistant Superintendent	1,600
H. Harris	Assistant Superintendent	1,500
S. C. Hogan	Assistant Superintendent	1,500
S. Peterson	Assistant Superintendent	1,500
A. Finnegan	Assistant Superintendent	1,350
D. Danzig	Assistant Superintendent	1,320
M. F. Carr	Supervisor	1,800
C. D. McComber	Assistant Supervisor	1,200
R. Shapiro	Assistant Supervisor	1,200
E. Sherlock	Assistant Supervisor	1,080
A. Mangeletti	Stenographer	900
N. Wolfe	Stenographer	900
		$18,250

Buffalo:

Name	Title	Amount
V. A. Zimmer	Superintendent	$2,250
J. A. Reed	Assistant Superintendent	1,500
F. Mahoney	Assistant Superintendent	1,500
J. A. Casey	Assistant Superintendent	1,500
H. Rusch	Assistant Superintendent	1,440
M. A. Potter	Supervisor	1,700
M. E. Webster	Assistant Supervisor	1,200
M. D. Whalen	Stenographer	1,140
C. Addison	Laborer	1,000
		$13,230

Dunkirk:

Name	Title	Amount
A. Clifford	Assistant Superintendent	$1,320

Manhattan:

Name	Title	Amount
J. A. Milligan	Superintendent	$2,400
H. Rothstein	Superintendent	2,300
B. Diamond	Assistant Superintendent	1,500
E. B. Coleman	Assistant Superintendent	1,500
A. Harkins	Assistant Superintendent	1,500
H. Finnegan	Assistant Superintendent	1,440
M. F. Connelly	Assistant Superintendent	1,440
R. E. Fitzgibbons	Assistant Superintendent	1,320
M. R. Satterlee	Supervisor	1,700
F. E. Wood	Assistant Supervisor	1,440
G. Rubenstein	Assistant Supervisor	1,350
B. L. Roff	Assistant Supervisor	1,200
M. Golieb	Stenographer	1,140
E. Sobernheim	Stenographer	1,020
F. H. Bernstein	Clerk	1,200
		$22,450

Rochester:

Name	Title	Amount
C. J. Dollen	Superintendent	$2,300
A. Husband	Assistant Superintendent	1,600
A. VanEtten	Assistant Superintendent	1,500
W. VonBacho	Assistant Superintendent	1,440
G. F. Poinan	Assistant Superintendent	1,440
H. M. Dean	Assistant Superintendent	1,320
M. M. Durney	Assistant Superintendent	1,200
W. J. Reidy	Assistant Superintendent	1,140
C. Walker	Assistant Supervisor	1,080
H. D. Snow	Assistant Supervisor	1,080
H. Hennegan	Stenographer	900
Vacancy	Laborer	600
		$15,600

Syracuse:

Name	Title	Amount
H. F. Costello	Superintendent	$2,000
B. Burns	Assistant Superintendent	1,500
E. L. Frick	Assistant Superintendent	1,440
G. H. Hodge	Assistant Superintendent	1,440
C. M. Tormey	Assistant Superintendent	1,200
D. E. Munro	Assistant Superintendent	1,020
M. M. Strong	Supervisor	1,700
L. M. Grabb	Assistant Supervisor	1,080
K. Purcell	Stenographer	900
		$12,280

Division of Aliens:

Name	Title	Amount
M. K. Clark	Chief of Division	$3,500
F. C. Praete	Investigator	1,500
J. J. Pignataro	Investigator	1,500
M. J. Levey	Investigator	1,200
F. C. Woodson	Stenographer	1,320
G. Zuelch	Stenographer	1,140
		$10,160

Division of Mediation and Arbitration:

M. J. Reagan	Chief Mediator	$3,500
J. J. Bealin	Special Agent	2,250
G. Hoffman	Stenographer or Typewriter-Copyist.	960
		$6,710

Albany:

P. J. Downey	Mediator of Industrial Disputes	$3,000
J. McManus	Mediator of Industrial Disputes	3,000
A. McCabe	Stenographer	1,440
		$7,440

State Insurance Fund — Administrative Division:

L. W. Hatch	Manager	$8,000
N. W. Muller	Assistant Manager	5,000
E. C. Morris	Secretary to Manager	2,000
B. Selzer	Stenographer	1,500
H. Hazelton	Junior Clerk	720
		$17,220

State Insurance Fund — Accounting Division:

C. H. Sears	Accountant	$4,000
C. E. Peppis	Actuarial or Statistical Clerk	2,000
H. J. Freeman	Junior Accountant	1,500
O. Theodore	Bookkeeper	1,500
J. J. Caverly	Bookkeeper	1,200
E. A. Hofgan	Bookkeeper	1,200
R. C. Gibney	Bookkeeper	1,200
E. C. Fosket	Underwriter	1,200
T. Calogero	Junior Accountant	1,200
H. Huybers	Actuarial or Statistical Clerk	900
N. Udkowitz	Actuarial or Statistical Clerk	900
H. Mossner	Junior Clerk	720
M. Shulberg	Junior Clerk	720
T. Garcia	Junior Clerk	720
		$18,960

Actuarial Division:

R. M. Pennock	Chief Actuary	$7,000
F. A. Fleming	Assistant Actuary	2,500
M. L. Fischer	Actuarial or Statistical Clerk	1,320
M. Tynan	Actuarial or Statistical Clerk	1,320
M. Infeld	Actuarial or Statistical Clerk	1,200
H. B. Smith	Actuarial or Statistical Clerk	1,200
T. Goldfarb	Stenographer	900
		$15,440

Claims Division:

L. D. Jones	Claim Auditor	$3,500
J. C. Higgins	Assistant Claim Auditor	1,800
J. C. Gallup	Assistant Claim Auditor	1,800
J. Eisele	Assistant Claim Auditor	1,800
J. Guagliardi	Assistant Claim Auditor	1,800
E. W. Olsen	Assistant Claim Auditor	1,800
J. A. Forrest	Underwriter	2,100
E. B. Hawks	Underwriter	2,100
W. B. Slack	Underwriter	1,800
G. A. Smith	Underwriter	1,500
A. I. Curran	Underwriter	1,200
J. R. Farrell	Underwriter	1,200
J. T. Farrell	Underwriter	1,200

Claims Division **(Continued):**

Name	Title	Amount
A. Schreiber	Chief Claim Investigator	1,500
L. Albert	Investigator	1,320
G. M. Avent	Investigator	1,200
J. J. Climan	Investigator	1,200
A. T. O'Hern	Investigator	1,200
P. J. Carr	Investigator	1,200
J. J. Curran, Jr	Investigator	1,200
E. C. Baldwin	Investigator	1,200
H. A. Schwartz	Investigator and Interpreter	1,200
J. Angione	Payroll Auditor	1,500
S. Sheleng	Clerk	900
M. Goldberg	Junior Clerk	720
E. Gibson	Junior Clerk	720
A. McGrath	Junior Clerk	720
M. J. McNeill	Stenographer or Typewriter-Copyist	960
J. Gross	Stenographer or Typewriter-Copyist	960
T. R. Egel	Stenographer	1,320
A. C. Kirwan	Stenographer	1,200
A. L. Stephenson	Stenographer	1,140
C. Mendoza	Stenographer	1,140
F. Janess	Stenographer	1,140
		$47,240

Filing Division:

Name	Title	Amount
W. D. Hose	File Clerk	$1,600
G. A. Jones	File Clerk	1,500
E. A. Huybers	File Clerk	900
M. A. Carpenter	Stenographer or Typewriter-Copyist	900
E. Julian	Junior Clerk	720
F. Bonfiglio	Junior Clerk	720
I. Levinson	Junior Clerk	720
M. Fitzgerald	Junior Clerk	720
G. Goodman	Junior Clerk	720
		$8,500

Inspection Division:

Name	Title	Amount
W. Newell	Inspector of Risks	$4,250
T. J. White	Safety Inspector	2,100
P. F. Connelly	Safety Inspector	2,100
D. C. Sullivan	Safety Inspector	2,100
T. F. Keeler	Safety Inspector	1,800
O. J. McKillop	Safety Inspector	1,800
H. W. Gabor	Safety Inspector	1,800
L. Messerschmitt	Safety Inspector	1,500
H. J. Winney	Safety Inspector	1,500
		$18,950

Medical Division:

Name	Title	Amount
H. Radin	Medical Adviser	$3,250
H. A. Green	Underwriter	1,500
F. Fein	Stenographer or Clerk	1,500
M. K. Foster	Stenographer	1,320
A. Herschkowitz	Stenographer or Typewriter-Copyist	960
J. LeMaire	Junior Clerk	720
B. Hutt	Junior Clerk	720
		$9,970

Payroll Auditing Division:

Name	Title	Amount
J. J. Lannen	Chief Payroll Auditor	$2,400
H. Inzelman	Payroll Auditor	1,800
P. Gardella	Payroll Auditor	1,500
E. Mason	Payroll Auditor	1,500
E. H. Ferris	Payroll Auditor	1,500
A. Schaefer	Payroll Auditor	1,500
C. Fisher	Payroll Auditor	1,500
W. Lebowitz	Payroll Auditor	1,500
F. C. Zimmerly	Payroll Auditor	1,500
M. Rubin	Payroll Auditor	1,500
D. I. Cantor	Underwriter	1,800
I. Metz	Underwriter	1,800
C. D. McMahon	Actuarial or Statistical Clerk	1,800
		$21,600

Stenographic Division:

Name	Title	Amount
B. A. Crosson	Assistant Examiner Claims	$1,500
I. Hordes	Stenographer	1,200
D. Rose	Stenographer	1,080
F. Pregosin	Stenographer	1,020
S. Selden	Stenographer	1,020
A. V. Costello	Stenographer	960
E. Eckerson	Stenographer	900
M. Finkle	Stenographer	900
L. A. Bertling	Stenographer	900
F. Katz	Stenographer or Typewriter-Copyist	1,020
M. Nussbaum	Stenographer or Typewriter-Copyist	900
R. M. Smith	Stenographer	960
		$12,860

Underwriting Division:

Name	Title	Amount
J. F. Mahoney	Underwriter	$2,400
T. G. Gorman	Underwriter	2,400
J. T. Lewis	Underwriter	2,400
M. A. Walsh	Underwriter	2.100
C. G. Baker	Underwriter	2.100
A. M. Frey	Underwriter	2.100
H. W. Pfeiffer	Underwriter	2.100
G. J. Stricker	Underwriter	1,800
E. F. Carr	Underwriter	1,500
J. T. Kemmerer	Underwriter	1,500
A. Olsen	Underwriter	1,200
E. J. Corcoran	Payroll Auditor	1,500
E. C. Pattison	Payroll Auditor	1,500
H. L. Riemer	Payroll Auditor	1,500
S. Rudin	Payroll Auditor	1,200
		$27,300

Bureau of Workmen's Compensation:

Name	Title	Amount
S. L. Otis	Director of Bureau	$5,000
J. McLusky	Referee	5,000
J. C. Brown	Referee	4,000
A. Tausky	Referee	4,000
W. A. Abbott	Referee	4,000
D. M. Stone	Referee	4,000
C. W. Phillips	Referee	4,000
C. K. Blatchly	Referee	4,000
J. S. Whipple	Referee	4,000
W. C. Richards	Referee	4,000
R. Lewy	Chief Medical Examiner	6,000
H. B. Boyle	Medical Examiner	3,250
J. Sesansky	Medical Examiner	2,500
W. L. Meehan	Assistant Chief of Claims	2,400
D. J. Mahoney	Examiner of Claims	2,000
S. Israel	Examiner of Claims	2,000
J. J. Keenan	Examiner of Claims	2,000
M. J. Murphy	Examiner of Claims	2,000
H. Berenberg	Examiner of Claims	2,000
J. F. Donovan	Examiner of Claims	2,000
R. P. Lawson	Examiner of Claims	2,000
E. B. Wickham	Examiner of Claims	2,000
G. C. Walsh	Examiner of Claims	1,800
H. F. Dimond	Examiner of Claims	1,800
C. M. Davis	Examiner of Claims	1,800
L. D. Kehoe	Examiner of Claims	1,800
C. Dick	Examiner of Claims	1,800
L. C. Schwartz	Examiner of Claims	1,800
H. Becker	Examiner of Claims	1,800
F. Ruby	Assistant Examiner of Claims	1,500
T. A. Gibney	Assistant Examiner of Claims	1,500
C. I. Brink	Assistant Examiner of Claims	1,500
F. Wilmarth	Assistant Examiner of Claims	1,500
R. F. Cooke	Assistant Examiner of Claims	1,500
E. Greiss	Assistant Examiner of Claims	1,820
F. A. Cardillo	Assistant Examiner of Claims	1,320
E. W. Mowat	Assistant Examiner of Claims	1,320
E. G. Larken	Assistant Examiner of Claims	1,320
M. Foran	Assistant Examiner of Claims	1,320
M. Constabile	Assistant Examiner of Claims	1.820
I. Feuer	Assistant Examiner of Claims	1,320
R. M. Fay	Assistant Examiner of Claims	1,820
I. Lee	Assistant Examiner of Claims	1,820

Bureau of Workmen's Compensation — (Continued):

Name	Title	Amount
J. Madonna	Assistant Examiner of Claims	1,200
G. M. Custer	Assistant Examiner of Claims	1,200
J. F. Horan	Assistant Examiner of Claims	1,200
C. Osborne	Assistant Examiner of Claims	1,200
E. Glasser	Assistant Examiner of Claims	1,200
J. M. Cefola	Assistant Examiner of Claims	1,200
E. F. Wunder	Assistant Examiner of Claims	1,200
R. Rosenberg	Assistant Examiner of Claims	1,200
F. W. Ross	Assistant Examiner of Claims	1,200
C. Boynan	Assistant Examiner of Claims	1,200
C. Downes	Assistant Examiner of Claims	1,200
A. DeLuca	Investigator	1,500
J. Schachewitz	Investigator	1,560
S. Graubard	Interpreter	1,440
A. Vioni	Interpreter	1,440
B. Port	Interpreter	1,440
F. Napoli	Interpreter	1,440
V. A. Caso	Interpreter	1,440
M. Christopher	Interpreter	1,320
S. Maguire	Interpreter	1,320
J. Munro	Librarian and Filing Clerk	2,000
S. Katzel	Director of After-Care Service	1,800
S. Gottfried	Stenographer	1,700
M. Potassin	Stenographer	1,440
B. Cohen	Stenographer	1,320
R. Livant	Stenographer	1,200
B. Israelowitz	Stenographer	1,200
M. Elwood	Stenographer	1,140
I. Romanoff	Stenographer	1,140
H. Dinan	Stenographer	1,140
C. Lovey	Stenographer	1,140
B. Kinsella	Stenographer	1,140
K. V. Carney	Stenographer	1,140
G. Hansen	Stenographer	1,140
M. Luchesi	Stenographer	1,140
I. L. Timpson	Stenographer	1,140
G. Rausch	Stenographer	1,080
B. Rosenberg	Stenographer	1,080
J. Ryan	Stenographer	1,080
M. T. Nally	Stenographer	1,080
E. Johnson	Stenographer	960
M. Shulman	Stenographer	900
S. Mann	Stenographer	900
C. Hersh	Stenographer	900
H. Costello	Stenographer	900
Vacancy	Stenographer	900
Vacancy	Stenographer	900
G. Connors	Stenographer	900
R. Tescher	Stenographer	900
R. L. Danetz	Stenographer	900
M. M. Byrne	Stenographer	900
M. McCarthy	Stenographer	960
	Stenographer	900
J. Mann	Stenographer or Typewriter-Copyist	1,080
F. C. Burg	Clerk or Bookkeeper	1,080
M. Daly	Clerk or Bookkeeper	1,020
I. Hussey	Clerk or Bookkeeper	720
T. J. Martin	Junior Clerk	750
E. G. Boland	Junior Clerk	750
M. VanBerk	File Clerk	1,100
		$171,610

Bureau of Workmen's Compensation — Albany:

Name	Title	Amount
J. A. Pisarri	Examiner of Claims	$1,800
M. A. Axleroad	Examiner of Claims	1,800
A. VanAllen	Examiner of Claims	2,000
E. F. Bates	Hearing Stenographer	1,920
M. L. Sammon	Hearing Stenographer	1,800
M. H. Lockwood	Hearing Stenographer	1,860
E. L. Goffe	Stenographer	1,440
K. McLean	Stenographer	1,260
B. L. Vener	Stenographer	1,260
H. Goldberg	Stenographer	1,200
F. McGraw	Stenographer	1,080

Bureau of Workmen's Compensation — Albany — (Continued):

Name	Title	Amount
F. Nally	Clerk	1,320
H. Carroll	Clerk	1,200
H. Fogerty	Clerk	900
P. D. Curnin	Junior Clerk	720
		$21,410

Bureau of Workmen's Compensation — Brooklyn:

Name	Title	Amount
A. J. Gompers	Examiner of Claims	$2,000
A. Delli Bovi	Interpreter	1,440
L. C. Noonan	Stenographer	1,140
		$4,580

Bureau of Workmen's Compensation — Buffalo:

Name	Title	Amount
R. P. Webster	Examiner of Claims	$1,800
F. M. Hochmuth	Assistant Examiner of Claims	1,500
E. P. Kamprath	Assistant Examiner of Claims	1,320
M. Slavin	Assistant Examiner of Claims	1,200
I. VonGrocholski	Investigator	1,200
F. C. McCall	Hearing Stenographer	1,800
A. Lankow	Stenographer	960
M. Barth	Stenographer	960
L. F. Russell	Stenographer	960
B. Gurtner	Stenographer	960
M. Seyler	Stenographer	960
M. Stroehlein	Stenographer	900
E. M. Sullivan	Clerk	1,320
E. R. Schottin	Clerk	1,200
H. J. Murphy	Junior Clerk	720
		$17,760

Bureau of Workmen's Compensation — Rochester:

Name	Title	Amount
W. F. Skuse	Examiner of Claims	$2,000
F. H. Lang	Examiner of Claims	1,800
W. J. Ward	Assistant Examiner of Claims	1,600
H. P. Ward	Assistant Examiner of Claims	1,200
J. Hanlon	Investigator or Clerk	1,200
A. C. Dobson	Hearing Stenographer	1,950
T. O. Burrows	Hearing Stenographer	1,800
C. M. Carroll	Hearing Stenographer	1,500
A. K. Hanna	Stenographer	960
L. M. Magin	Stenographer	900
F. Turney	Clerk or Stenographer	900
M. A. L. Taylor	Junior Clerk	720
		$16,530

Bureau of Workmen's Compensation — Syracuse:

Name	Title	Amount
W. E. Lewis	Examiner of Claims	$2,000
B. Foley	Examiner of Claims	1,800
A. I. Smith	Examiner of Claims	1,800
E. A. Kaye	Assistant Examiner of Claims	1,500
M. F. Quinlan	Hearing Stenographer	1,600
M. H. Hynes	Hearing Stenographer	1,500
F. E. Burke	Stenographer	1,200
C. V. Tackley	Stenographer	960
E. M. Young	Stenographer or Typewriter-Copyist	1,000
F. D. Cunningham	Bookkeeper or Clerk	1,320
C. W. Baumbach	Calendar Clerk	1,200
B. B. Bennett	Junior Clerk	720
		$16,600

Salaries — temporary	$3,792

SUMMARY

APPORTIONMENT OF PERSONAL SERVICE APPROPRIATION AS OF PAYROLL JULY 1-15, 1921

Division or Bureau	*Amount*
General Administration	$65,760 00
Office of Secretary — New York	59,100 00
Office of Secretary — Albany	14,890 00
Division of Accounts	14,240 00
Division of Cashier	9,480 00
Office of Chief Statistician — Administrative Division	6,100 00
Division of Special Investigations — Albany	7,780 00
Division of Accidents and Diseases — Albany	16,950 00
Division of General Labor Statistics — Albany	16,420 00
New York Office	10,550 00
Buffalo Office	2,000 00
Rochester Office	1,800 00
Syracuse Office	1,800 00
Division of Bulletins and Publications	3,000 00
Building, Care and Cleaning	27,348 00
Legal Division	5,800 00
Bureau of Inspection	8,880 00
Division of Factory Inspection — New York	120,640 00
Division of Factory Inspection — Albany	45,460 00
Division of Factory Inspection — Buffalo	14,340 00
Division of Factory Inspection — Rochester	13,800 00
Division of Factory Inspection — Utica	16,200 00
Division of Mercantile Inspection	47,950 00
Division of Homework Inspection	23,290 00
Division of Industrial Hygiene	26,490 00
Division of Engineering — Albany	4,230 00
Division of Boiler Inspection	23,290 00
Division of Women in Industry	6,300 00
Bureau of Industrial Code	9,600 00
Bureau of Industrial Relations	
Division of Employment — New York	7,150 00
Division of Employment — Albany	12,080 00
Division of Employment — Brooklyn	18,250 00
Division of Employment — Buffalo	13,230 00
Division of Employment — Dunkirk	1,320 00
Division of Employment — Manhattan	22,450 00
Division of Employment,— Rochester	15,600 00
Division of Employment — Syracuse	12,280 00
Division of Aliens	10,160 00
Division of Mediation and Arbitration — New York	6,710 00
Division of Mediation and Arbitration — Albany	7,440 00
State Insurance Fund — Administrative Division	17,220 00
Accounting Division	18,960 00
Actuarial Division	15,440 00
Claims Division	47,240 00
Filing Division	8,500 00
Inspection Division	18,950 00
Medical Division	9,970 00
Payroll Auditing Division	21,600 00
Stenographic Division	12,360 00
Underwriting Division	27,300 00
Bureau of Workmen's Compensation	171,610 00
Albany Office	21,410 00
Brooklyn Office	4,580 00
Buffalo Office	17,760 00
Rochester Office	16,530 00
Syracuse Office	16,600 00
Salaries — temporary	3,792 00
Total	$1,200,000 00

APPENDIX 4

NEW YORK STATE — LABOR DEPARTMENT

In the Matter of Determining and Assessing the Expenses of Administering the Workmen's Compensation Law for the Fiscal Year Ending June 30, 1920.

Pursuant to the provisions of Section 77 of the Workmen's Compensation Law as amended by Chapter 622 of the Laws of 1916, and further amended by Chapter 540, Laws of 1921, I, Henry D. Sayer, The Industrial Commissioner, do hereby ascertain and determine as follows:

1. That the amount of expenses incurred during the fiscal year ending June 30, 1920, in connection with the administration of the Workmen's Compensation Law is Five Hundred Sixty Six Thousand, One Hundred Seventy-seven Dollars and Eighty-one Cents ($566,177.81).
2. That the total of compensation or payments made by all insurance carriers, including the State Insurance Fund, during the fiscal year ending June 30, 1920, is Fourteen Million, Six Hundred Sixty-three Thousand, Two Hundred Twenty Dollars and Eighty-five Cents ($14,663,220.85).
3. That the percentage which the total expenses bear to the total compensation or payments made is .0386121, and

There having been, heretofore and on or about the 8th day of March, 1921, submitted to each insurance carrier a statement of the payments of compensation made by said carriers during said fiscal year, together with a statement of compensation expenses and compensation payments for said period and each insurance carrier on said date having been advised that unless objections to said statement were filed on or before March 18, 1921, said statement would be assumed to be correct, and no corrections having been filed,

Now Therefore, I, Henry D. Sayer, The Industrial Commissioner, *Do Hereby Assess* upon each insurance carrier, including the State Insurance Fund, the proportion of such expense that the total compensation or payments made by each such carrier in such year bears to the total compensation or payments made by all insurance carriers, as appears in Statement hereto annexed and hereby referred to as forming a part hereof.

Dated *September* 1, 1921.

HENRY D. SAYER,
The Industrial Commissioner.

APPENDIX 5

ALLOCATION OF COMPENSATION EXPENSES, JULY 1, 1919 TO JUNE 30, 1920

		Death	Disability	Total	Pro rata share
Adirondack Electric Power Corp	Glens Falls	$453 19	$3,128 18	$3,581 37	$138 28
Aetna Explosives Co	165 Broadway, New York City	346 00	31 89	377 89	14 59
Aetna Life Insurance Co	Hartford, Conn	93,949 42	696,324 71	790,274 13	30,514 14
Aldrich Paper Co	Natural Dam		1,943 38	1,943 38	75 04
Alpha Portland Cement Co	Easton, Pa	4,360 28	2,580 87	6,941 15	268 01
Aluminum Co. of America	Massena	1,060 59	8,549 14	9,609 73	371 05
Alleghany County Tel. Co	15 Dey street, New York City				
Allied Mutual Liability Ins. Co	25 W. 43d street, New York City	12,165 23	153,895 05	166,060 28	6,411 94
American Mutual Liability Ins. Co	245 State street, Boston, Mass	10,705 96	544,623 16	555,329 12	21,443 42
Amsterdam (City of)	1 Market street, Amsterdam				
Anchor Line Ltd., Henderson Bros	21–24 State street, New York City				
Auditore Contracting Co	2 Stone street, New York City	232 50	387 50	620 00	23 94
American Laundry Machine Co	Box 88, Rochester		126 60	126 60	4 89
Auditore & Sons	14 Hamilton avenue, Brooklyn		21,105 36	21,105 36	814 92
Aluminum Co. of America	Niagara Falls	181 99	4,187 65	4,369 64	168 72
American Bridge Co	Frick Bldg., Pittsburg, Pa	2,049 32	11,600 48	13,649 80	527 05
American Can Co	120 Broadway, New York City	984 91	12,902 29	13,887 20	536 21
American Car & Foundry Co	165 Broadway, New York City	494 90	23,276 64	23,771 54	917 87
American Cigar Co	111 Fifth avenue, New York City		149 01	149 01	5 75
American Locomotive Co	30 Church street, New York City	12,785 90	53,095 15	65,881 05	2,543 81
American Mutual Compensation Ins. Co	18 E. 41st street, New York City	8,383 42	9,620 00	18,003 42	695 15
American Railway Express Co	119 W. 19th street, New York City		84,866 32	84,866 32	3,276 87
American Sugar Refining Co	49 South Second street, Brooklyn	8,279 47	21,344 66	29,624 13	1,143 85
American Telephone & Telegraph Co	195 Broadway, New York City	523 34	564 98	1,088 32	42 02
American Tobacco Co	111 Fifth avenue, New York City	145 32	991 13	1,136 45	43 88
American Woodworking Machinery Co	Rochester		2,995 98	2,995 98	115 68
Arcade & Attica R.R. Corp	Arcade		254 18	254 18	9 81
Art-in-Buttons, Inc	10 Champeney Terrace, Rochester		6,392 54	6,392 54	246 83
Ashtabula & Buffalo Dock Co	Buffalo		780 00	780 00	30 11
Ashtabula Steamship Co	Buffalo				
Auburn & Syracuse Elec. R. R. Co	82 Genesee street, Auburn		2,936 33	2,936 33	113 37
Aronson, Israel	3009 Atlantic avenue, Brooklyn				
Aluminum Castings Co	1850 Elmwood avenue, Buffalo	214 28	659 98	874 26	33 76
American Brass Co	446 Military Road, Buffalo	1,092 62	9,684 23	10,776 85	416 12
American Express Co	65 Broadway, New York City		192 11	102 11	7 42
Atlas Furniture Co	Allen street extension, Jamestown		187 85	187 85	7 25
Bailey & Sons, Inc	Patchogue, Long Island		608 72	608 72	23 50
Bakers Mutual Insurance Co	61 Broadway, New York City	249 05	13,817 24	14,066 29	543 12
Baltimore & Ohio R. R. Co	295 Broadway, New York City		3,907 39	3,907 39	150 87
Barbour Flax Spinning Co	Greenwich				
Barrett Nelphews Co	334 Canal street, New York City				
Bay Ridge Operating Co	34 Whitehall street, New York City		23,168 28	23,168 28	894 58

Brewer Titchener Corp. (Forging Div.)	Cleveland street, Cortland		2,162 49	2,162 49	83 50
Bartlett Haywood Co	Scott & McHenry street, Baltimore, Md.	570 18	3,227 85	3,798 03	146 65
Bastian Bros. Co	69 Mt. Hope avenue, Rochester		1,291 68	1,291 68	49 87
Beacon, (City of)	Dutchess Co.				
Brooklyn & North River R. R. Co	165 Broadway, New York City		64 29	64 29	2 48
Belden & Co	Genesee				
Belt Line Ry. Corp	2396 Third avenue, New York City	318 40	774 78	1,093 18	42 21
Berman Bros	405 E. 107th street, New York City				
Bluff Point Land Improvement Co	32 Nassau street, New York City				
Booth & Flinn, Ltd	17 Battery place, New York City	621 78	13,928 36	14,550 14	561 81
Booth & Flinn, Ltd. (Successor, Flinn & O'Rourke Co., Inc.)	17 Battery place, New York City	4,320 72	23,210 77	27,531 49	1,063 05
Bossert, L. & Sons, Inc	1335 Grand street, Brooklyn	235 40	6,233 96	6,469 36	249 80
Bouker Contracting Co	21 State street, New York City		610 16	610 16	23 56
Boston & Albany R. R. (N. Y. C. R. R. Line)	South Station, Boston, Mass				
Bretagne Co	767 Fifth avenue, New York City	700 08		700 08	27 03
Brewer Titchener Corp. (Goods & Carriage Div.)	115 Port Watson street, Cortland		4,272 86	4,272 86	164 98
Bronx Park Commission	Municipal Bldg., New York City		540 57	540 57	20 87
Brooklyn Cooperage Co	117 Wall street, New York City	152 25	18,228 82	18,381 07	709 73
Brooklyn Heights R. R. Co. (L. M. Garrison, Rec.)	85 Clinton street, Brooklyn	3,597 37	6,790 25	10,387 62	401 09
Brooklyn Union Gas Co	176 Remsen street, Brooklyn	847 32	5,819 64	6,666 96	257 43
Brooklyn, Queens Co. & Suburban R. R. Co. (L. M. Garrison, Rec.)	85 Clinton street, Brooklyn		212 85	212 85	8 22
Brooklyn Rapid Transit Co. (L. M. Garrison, Rec.)	85 Clinton street, Brooklyn	5,332 48	21,177 89	26,510 37	1,023 62
Buffalo, (City of)	Municipal Bldg., Buffalo	1,408 04	7,314 34	8,722 38	336 79
Buffalo Dry Dock	191 Ganson street, Buffalo	479 96	11,650 96	12,130 92	468 40
Buffalo, Rochester & Pittsburg R. R	155 Main street, W. Rochester	783 46	1,760 84	2,544 30	98 24
Buffalo, Susquehanna R. R	Wellsville		64 00	64 00	2 47
Buffalo Trunk Mfg. Co	Buffalo		499 72	499 72	19 30
Bush Terminal Co	100 Broad street, New York City	6,112 15	10,173 73	16,285 88	628 83
Burns Bros	50 Church street, New York City		3,991 38	3,991 38	154 12
Brooklyn Edison Co	360 Pearl street, Brooklyn		8,942 59	8,942 59	345 29
Bull Insular Line, Inc	17 Battery place, New York City		19,632 11	19,632 11	758 04
Bailey & Sons, Inc	105 Vandeveer street, Brooklyn				
Borden Co	108 Hudson street, New York City	537 78	5,980 35	6,518 13	251 68
Borden's Farm Products Co	108 Hudson streeet, New York City	2,039 31	24,967 45	27,006 76	1,042 79
Brooklyn City R. R. City	85 Clinton street, Brooklyn	800 86	1,945 08	2,745 94	106 03
Buffalo Brake Beam Co	32 Nassau street, New York City				
Boston & Maine R. R. Co	North Station, Boston, Mass				
Broome, (County of)	Court House, Binghamton		369 28	369 28	14 26
Carroll Towing Co., Inc	Pier 5, Bush Terminal Bldgs., Bklyn.				
Richard Carvel Co., Inc	19 E. 24th street, New York City		1,878 42	1,878 42	72 53
Casenovia, (Village of)	Cazenovia				
Cayadutta Generating Co	Main street, Fonda		22 34	22 34	86
Central Leather Co	17 Battery place, New York City	415 00	177 50	592 50	22 88
Central New England R. R. Co	Room 3859, Grand Central Terminal, New York City	1,046 41		1,046 41	40 40

ALLOCATION OF COMPENSATION EXPENSES, JULY 1, 1919 TO JUNE 30, 1920 — (*Continued*)

		Death	Disability	Total	Pro rata share
Central R. R. of New Jersey	Jersey City, N. J		$254 35	$254 35	$9 82
Central Hudson Steamboat Co	Newburgh	$255 76	454 74	710 50	27 43
Central & Western New York Brewers' & Maltsters' Mutual Insurance Co	Arkay Bldg., Albany	9,585 01	8,540 64	18,125 65	699 87
Chateaugay Ore & Iron Co	Lyon Mountain	4,239 65	5,017 99	9,257 64	357 46
Childs Co	200 Fifth avenue, New York City	327 60	3,257 84	3,585 44	138 44
Wm. Clark Co	333 Hollenbeck street, Rochester		1,103 88	1,103 88	42 62
Clyde Steamship Co	Pier, 36, North River, New York City.		19,910 64	19,910 64	768 79
Chester, (Town of)	Orange County				
Crawford, Fred, (Inc.)	149 Remsen street, Brooklyn				
Coal Merchant's Mutual Ins. Co. of New York	Arkay Bldg., Albany	1,460 67	18,314 25	19,774 92	763 55
Colonial Navigation Co	Pier 37, North River, New York City		845 00	845 00	32 63
Commercial Cable Co	253 Broadway, New York City				
Commercial Casualty Ins. Co	31 Clinton street, Newark, N. J	2,131 35	32,933 94	35,065 29	1,353 94
Coney Island & Brooklyn R. R. Co	Brooklyn	497 90	4,499 69	4,997 59	192 97
Coney Island & Gravesend R. R. Co	Brooklyn		419 44	419 44	16 20
Consolidated Gas Co., In Care of Hamlin & Co	17 Cedar street, New York City	22,179 66	72,557 67	94,737 33	3,658 00
Consolidated Tel. & Elect. Subway Co	54 Lafayette street, New York City	1,031 49	4,317 80	5,349 29	206 55
Continental Casualty Co	910 S. Michigan avenue, Chicago, Ill	1,824 62	43,011 98	44,836 60	1,731 24
Cornell Steamboat Co	22 Ferry street, Kingston	100 00	2,750 54	2,850 54	110 07
Corning & Painted Post St. Ry. Co	400 E. Water street, Elmira		75 82	75 82	2 93
Barth S. Cronin Co	573 Clinton street, Brooklyn		3,523 93	3,523 93	136 07
Crucible Steel Co. of America (Sanderson Bros. Works)	Syracuse		7,060 96	7,060 96	272 64
Cunard Steamship Co	21 State street, New York City		11,289 78	11,289 78	435 92
Cushman's Sons, Inc	49 Manhattan street, Brooklyn		2,092 82	2,092 82	80 81
Champlain Transport Line, (U. S. R. R. Admin.)	Room 601, D. & H. Bldg., Albany				
Coastwise Lumber Supply Co	46 Cedar street, New York City		160 00	160 00	6 18
Carter & Weeks Stevedoring Co	Produce Exchange Bldg., New York City		7,171 00	7,171 00	276 89
Compagnie Generale Transatlantique	19 State street, New York City	2,475 00	6,204 33	8,679 33	335 13
Commonwealth & Dominion Line	Pier 10, Brooklyn		15 00	15 00	60
Maritime Co. of Cuba (Munson S. S. Line, Agent)	82–92 Beaver street, New York City		7,425 50	7,425 50	286 71
Cortland County	Cortland				
Compressed Cork Co	Ossining		3,421 71	3,421 71	132 12
Cohocton, (Town of)	Cohocton				
Chenango, (County of)	Norwich		12 10	12 10	47
Cleary Bros	116 Broad street, New York City				
Degnon Contracting Co	51 E. 42d street, New York City	2,327 84	8,215 62	10,543 46	407 11
Delaware & Hudson R. R. Co	Room 601, D. & H. Bldg., Albany	8,255 91	24,473 30	32,729 21	1,263 74
Delaware, Lackawanna & Western R. R	90 West street, New York City	2,126 34	6,682 46	8,808 80	340 12
Delaware & Northern R. R	Margaretville		480 97	486 97	18 80
R. E. Dietz Co	60 Laight street, New York City		7,751 06	7,751 06	299 28

Donner Steel Co., Inc.	475 Abbot road, Buffalo	2,57317	23,361 61	25,034 78	1,0 1 40
Dry Dock & East Broadway & Battery R. R. Co.	2396 Third avenue, New York City	242 48	870 42	1,112 90	42 97
Dupont Fabrikoid Co.	Wilmington, Del.		1,714 20	1,714 20	66 19
E. I. DePont DeNemours & Co.	Wilmington, Del.		435 03	435 05	16 80
E. I. DuPont deNemours Co., Inc.	Cottage St., Poughkeepsie				
Eastern Malleable Iron Co.	Troy		4,090 85	4,090 85	157 96
Eastern Steamship Lines, Inc.	Pier 19, North River, New York City		3,787 84	3,787 84	146 26
Eastman Kodak Co. of New York	343 State street, Rochester	1,402 99	45,680 17	47,083 16	1,817 98
Eastman Kodak Co. of N. J.	343 State street, Rochester		145 61	145 61	5 62
Easton, (Town of)	Easton				
Elba, (Town of)	Elba				
Electric Carbon Co.	Niagara Falls		1,705 61	1,705 61	65 86
Elmira Water Board	City Hall, Elmira		481 24	484 24	18 70
Empire City Subway Co.	15 Dey street, New York City	270 03	1,328 31	1,598 34	61 72
Empire Engineering Co.	6 Church street, New York City	5,328 93	4,083 11	9,412 04	363 42
Empire State R. R. Corp.	Syracuse		2,419 32	2,419 32	93 42
Employers' Liability Assurance Corp.	33 Broad street, Boston, Mass.	94,808 57	1,133,752 36	1,228,560 93	47,437 00
Elmira Heights, (Village of)	Elmira Heights				
Employers Mutual Insurance Co. of N. Y.	61 Broadway, New York City	20,745 21	201,050 16	221,795 37	8,563 99
Equitable Life Assurance Society of U. S.	120 Broadway, New York City		1,766 18	1,766 18	68 20
Erie R. R. Co.	50 Church street, New York City	5,147 17	38,846 00	43,993 17	1,698 67
Exchange Mutual Industrial Insurance Co.	413-15 Erie Co. Savings Bank Bldg., Buffalo	10,385 65	40,284 64	50,670 29	1,956 49
Electric Carbon Co.	Massena		6,398 97	6,398 97	247 08
Electrical Testing Laboratories	80th street, East End avenue, New York City				
Empire Repairs & Electric Welding Co.	44 Whitehall street, New York City		2,301 39	2,301 39	88.86
Erie Foundry Co.	50 Dewey avenue, Rochester		1,093 82	1,093 82	42 23
Exchange Buffet Corp.	52 William street, New York City		90 25	90 25	3 48
B. Feifer & Co.	427 E. 76th street, New York City				
Fidelity & Casualty Co. of N. Y.	92 Liberty street, New York City	36,950 88	401,252 40	438,203 28	16,919 95
Fidelity & Deposit Co. of Md.	Baltimore, Md.	3,885 22	842 97	4,728 19	182 57
Finch, Pruyn & Co.	1 Glen street, Glens Falls		5,725 85	5,725 85	221 09
Fire Insurance Salvage Corps. of Brooklyn	123 William street, New York City				
Flatbush Gas Co.	176 Remsen street, Brooklyn	966 39		966 39	37 31
Fonda, Johnstown & Gloversville R. R. Co.	102 W. Fulton street, Gloversville	438 40	4,258 23	4,696 63	181 35
Ford Motor Co. of Delaware	1710 Broadway, New York City				
Fort William Henry Hotel Co.	32 Nassau street, New York City				
42d St., Manhattanville & St. Nicholas Ave. Ry. Co.	2396 Third avenue, New York City	1,459 36	396 45	1,855 81	71 66
Freeport (Village of)	Freeport				
G. A. Fuller Co.	949 Broadway, New York City	6,924 41	10,548 30	17,472 71	674 66
Fulton County Gas & Electric Co.	18 E. Fulton street, Gloversville	824 19	936 52	1,760 71	67 98
Federal Mutual Liability Insurance Co.	142 Berkeley street, Boston, Mass.		4,642 01	4,642 01	179 24
Fulton (County of) (J. R. Robertson, Treasurer)	Johnstown				
General Accident Fire and Life Assurance Co.	4th and Walnut streets, Philadelphia, Pa.	13,712 49	56,999 51	70,712 00	2,730 34
General Electric Co.	Schenectady	12,262 71	91,227 40	103,490 11	3,995 97

ALLOCATION OF COMPENSATION EXPENSES, JULY 1, 1919 TO JUNE 30, 1920 — (*Continued*)

		Death	Disability	Total	Pro rata share
Hugh Getty, Inc	359 W. 26th street, New York City	....	$60 00	$60 00	$2 32
Gleason Works	1000 University avenue, Rochester	....	4,381 52	4,381 52	169 30
Glen Cove R. R. Co	Penn Station, New York City	....	....	....	....
Globe Indemnity Co	45 William street, New York City	$31,509 94	315,018 26	346,528 20	13,380 18
B. F. Goodrich Rubber Co	Akron, O	....	1,384 51	1,384 51	53 46
Grand Trunk Ry. Co. of Canada	Montreal, Canada	....	....	....	....
Great Eastern Casualty Co	55 John St., New York City	....	1,240 38	1,240 38	47 89
Green Island (Village of)	Green Island	....	....	....	....
Greenwich (Town of)	Greenwich	....	....	....	....
Greenwich & Johnsonville R. R. Co	Room 601, D. & H. Bldg., Albany	....	....	....	....
General Cigar Co. (304-18 E. 54th street)	119 W. 40th street, New York City	....	126 94	126 94	4 90
General Cigar Co. (1298-1300 First avenue)	119 W. 40th street, New York City	....	5 00	5 00	19
Greece (Town of)	Monroe Co	....	599 04	599 04	23 13
Halcomb Steel Co	Syracuse	1,352 40	10,584 60	11,937 00	460 91
Hannawa Falls Water Power	Potsdam	....	....	....	....
Hampshire Pearl Button Co	31 E. Main street, Amsterdam	....	717 58	717 58	27 71
T. Hogan & Sons	120 Broadway, New York City	....	21,838 08	21,838 08	843 21
Hartford Accident & Indemnity Co	Hartford, Conn	13,786 15	176,882 68	190,668 83	7,362 12
Hatheway & Reynolds	Oriskany Falls	....	240 09	240 09	9 27
H. J. Heinz Co	Pittsburg, Pa	....	2,110 44	2,110 44	81 49
Hercules Powder Co	Wilmington, Del	....	664 62	664 62	25 66
Herkimer (Town of)	Herkimer	....	....	....	....
Holbrook, Cabot & Rollins Corp	52 Vanderbilt avenue, New York City	4,659 16	11,152 27	15,811 43	610 51
Holmes Electric Protective Co	15 Dey street, New York City	67 50	37 50	105 00	4 05
Horicon (Town of)	Horicon	....	....	....	....
Hudson Navigation Co. (Borland & Emerson, Receivers)	Pier 32, N. R., New York City	....	587 26	587 26	22 68
Hudson River Day Line	Desbrosses Street Pier, New York City	....	300 00	300 00	11 58
Hudson & Manhattan R. R. Co	30 Church street, New York City	....	175 04	175 04	6 76
Hudson Valley R. R. Co	598 Broadway, Albany	422 15	2,372 66	2,794 81	107 91
Huntington R. R. Co	Penn Station, New York City	....	....	....	....
Huron Stevedoring Corp	46 Cedar street, New York City	....	4,700 00	4,700 00	181 48
Hygeia Ice Co	305 E. 80th street, New York City	....	20 00	20 00	77
W. O. Horn & Bros	846 Broadway, New York City	....	....	....	....
Huntoon Ice Co	631 Hudson street, New York City	....	885 18	885 18	34 18
Hart Mfg. Co	Buffalo	6 00	80 00	86 00	3 32
Hardman Peck & Co. (Hamlin & Co., Agents)	433 Fifth avenue, New York City (17 Cedar street, City)	....	376 56	376 56	14 54
Hardenbergh (Town of)	Seager	....	....	....	....
Interboro Mutual Indemnity Insurance Co	109 E. 15th street, New York City	12,175 10	63,720 10	75,901 20	2,930 82
Interboro Rapid Transit Co	165 Broadway, New York City	57,074 63	52,311 57	109,386 20	4,223 65
International Harvester Co. of America	606 S. Michigan avenue, Chicago, Ill	....	638 15	638 15	24 64
International Harvester Co	24 Genesee street, Auburn	....	5,461 80	5,461 80	210 89

International Mercantile Marine Co	9 Broadway, New York City		68,854 47	68,854 47	2,058 62
International Silver Co	Maiden Lane, New York City		450 60	450 00	17 38
Iroquois Natural Gas Co	37 Church street, Buffalo		2,545 23	2,545 28	98 28
Ithaca (City of)	Ithaca		446 00	446 00	17 22
Interlake Steamship Co	Buffalo				
Joseph Intall & Co	163 Pacific street, Brooklyn				
International Stevedoring Co	24 Water street, New York City		607 00	607 00	23 44
Industrial Chemical Co	Mechanicville				
Jacobs & Davies, Inc., care of Hamlin & Co	17 Cedar street, New York City		305 00	305 00	11 78
Jamaica Gas Light Co	176 Remsen street, Brooklyn		63 70	63 70	2 46
Jamestown (City of)	Jamestown		1,635 92	1,635 92	63 17
Jewell Steel & Malleable Co	373 Hertel avenue, Buffalo		2,582 07	2,582 07	99 70
Jamestown Telephone Co	210 Pine street, Jamestown				
Jamestown Chair Co	20 Windsor street, Jamestown		450 00	450 00	17 38
W. J. Judge	186 Main street, Buffalo		804 85	804 85	31 06
Knickerbocker Ice Co	1480 Broadway, New York City	1,655 99	13,948 27	15,604 26	602 51
Knickerbocker Silver Co	Port Jervis				
William J. Kennedy Co	518 W. 22d street, New York City		1,519 77	1,519 77	58 68
Kellogg Products, Inc	110 Delaware avenue, Buffalo		300 00	300 00	11 58
Spencer Kellogg & Son	98 Delaware avenue, Buffalo		1,373 30	1,373 30	53 03
C. P. Kierney Co	307 E. 80th street, New York City				
Lake Champlain Transport Co	Whitehall		893 45	893 45	34 50
Lehigh Valley R. R. Co	143 Liberty street, New York City				
Lehigh & New England R. R. Co	437 Chestnut street, Philadelphia, Pa.	249 36	933 30	1,182 66	45 67
Lehigh & Hudson River R. R. Co	60 Main street, Warwick				
Lehigh Valley R. R. Co	143 Liberty street, New York City	324 00		324 00	12 51
Liberty Mutual Insurance Co	185 Devonshire street, Boston, Mass.	7,133 79	76,093 12	83,226 91	3,213 57
Frederick Loeser & Co., Inc	484–96 Fulton street, Brooklyn		1,163 86	1,163 86	44 94
London Guarantee & Accident Co	134 La Salle street, Chicago, Ill	28,025 18	485,616 82	513,642 00	19,832 80
London & Lancashire Indemnity Co	57 William street, New York City	1,974 38	6,745 26	8,719 64	336 69
Long Island Electric Railway	7 and 9 Borden avenue, Long Island City		255 00	255 00	9 85
Long Island R. R. Co	Pennsylvania Station, New York City	19,904 65	41,762 14	61,666 79	2,381 08
Lowville & Beaver R. R. Co	Lowville	238 48		238 48	9 21
Lumber Mutual Casualty Insurance Co., New York	66 Broadway, New York City	7,829 07	167,144 84	174,973 91	6,756 11
Luzerne (Town of)	Luzerne				
Lake George Steamboat Co	Room 601, D. & H. Bldg., Albany		514 14	514 14	19 85
Lalance & Grosjean Mfg. Co	Woodhaven, L. I.		6,272 04	6,272 04	242 18
Luckenbach Steamship Co	44 Whitehall street, New York City				
Levering, Garrigues Co	552 W. 23d street, New York City		261 00	261 00	10 08
Fred T. Ley & Co	495 Main street, Springfield, Mass		85 71	85 71	3 31
McGraw-Hill, Inc	10th avenue and 36th street, New York City		255 06	255 06	9 85
McQuade Stevedoring Co	17 Battery Place, New York City		210 00	210 00	8 10
McWilliam Bros., Inc	1 Broadway, New York City, Room 222		487 50	487 50	18 82

ALLOCATION OF COMPENSATION EXPENSES, JULY 1, 1919 TO JUNE 30, 1920 — (*Continued*)

		Death	Disability	Total	Pro rata share
Mallory Steamship Co.	Pier 36, N. R., New York City	$618 68	$2,773 26	$3,391 94	$130 97
Manufacturers Liability Insurance Co.	1 Montogmery street, Jersey City, N. J.	21,445 06	483,385 47	504,830 53	19,492 57
Marcellus & Otisco Lake Ry. Co.	Marcellus	....	....	....	....
Maryland Casualty Co.	Baltimore, Md	44,784 09	715,402 00	760,186 09	29,352 38
Massachusetts Bonding & Insurance Co.	85 State street, Boston, Mass	13,260 77	21,424 56	34,685 33	1,339 27
Massena Electric Light & Power Co	Pittsburg, Pa. (2400 Oliver Bldg.)	....	....	....	....
Massena Terminal R. R. Co	Massena	....	....	....	....
Massey, Harris Harvester Co.	Batavia	....	6,079 65	6,079 65	234 75
Medina Water Works	City Hall, Medina	....	217 76	217 76	8 41
Merchants Despatch Transportation Co.	East Rochester	1,217 71	6,257 90	7,475 61	288 65
Mid Crosstown Ry. Co.	2396 Third avenue, New York City	....	....	....	....
Morse Dry Dock & Repair Co	Foot 56th street, Brooklyn	13,163 07	49,136 60	62,299 67	2,405 52
Muchattoes Lake Ice Co.	14 Water street, Newburg	....	527 10	527 10	20 35
L. Mundet & Sons, Inc.	King & Ferris street, Brooklyn	1,772 31	620 26	2,392 57	92 38
Mutual Life Insurance Co.	32 Nassau street, New York City	....	180 67	180 67	6 98
Miller, Franklin, Bosset & Co.	347 Madison avenue, New York City	....	....	....	....
Middlesex (Town of), Yates Co.	Middlesex	....	....	....	....
Montgomery (County of)	Amsterdam	....	....	....	....
Mountain Home Telephone Co.	15 Dey street, New York City	....	....	....	....
Mt. Vernon (City of)	Mt. Vernon	....	....	....	....
Metropolitan Sewing Machine Co.	Nyack	....	....	....	....
Mutual Casualty Insurance Co.	18 E. 41st street, New York City	942 60	14,977 53	15,920 13	614 71
Medina (Village of)	Medina	....	217 76	217 76	8 41
Nassau County Ry. Co.	Pennsylvania Station, New York City	....	....	....	....
Nassau Electric R. R. Co.	Brooklyn	1,441 24	7,807 90	9,249 14	357,13
Nassau Light & Power Co.	Mineola	....	229 37	229 37	8 86
National Conduit & Cable Co.	Hastings-on-Hudson	2,101 51	14,265 88	16,367 39	631 98
National Enameling & Stamping Co.	413 Fifth avenue, New York City	....	6,371 02	6,371 02	246 00
National Lead Co., care of Hamlin & Co.	17 Cedar street, New York City	275 94	8,683 75	8,959 69	345 95
National Tube Co.	Frick Bldg., Pittsburg, Pa	220 48	460 72	681 20	26 30
New Amsterdam Casualty Co.	7 St. Paul street, Baltimore, Md	13,526 92	187,533 41	201,060 33	7,763 36
New England S. S. Co.	Pier 14, N. R., New York City	152 35	6,558 07	6,710 42	259 10
Newtown Gas Co.	176 Remsen street, Brooklyn	....	83 40	83 40	3 22
New York Air Brake Co.	165 Broadway, New York City	2,136 18	17,843 52	19,979 70	771 46
New York Board of Fire Underwriters	123 William street, New York City	....	....	....	....
New York Central Railroad Co	Grand Central Terminal, New York City	2,145 80	6,668 29	8,814 09	340 33
New York, Chicago & St. Louis R. R. Co	Columbia Bldg., Cleveland, Ohio	579 96	....	579 96	22 39
New York City	Municipal Bldg., New York City	16,754 24	83,256 01	100,010 25	3,861 61
New York City Interborough Ry. Co	2396 Third avenue, New York City	571 36	335 40	906 76	35 01
New York Consolidated R. R. Co	Brooklyn	11,598 74	6,074 31	17,673 05	682 40
New York & Cuba Mail S. S. Co	Foot of Wall street, New York City	....	26,692 50	26,692 50	1,030 66
New York Knife Co	225 Fifth avenue, New York City	....	2,040 46	2,040 46	78 79

New York & Long Island Traction Co	7 and 9 Borden avenue, Long Island City		646 80	646 80	24 97
New York, New Haven & Hartford R. R. Co	Room 3,839, Grand Central Terminal, New York City		27 52	27 52	1 06
New York & New Jersey Construction Co	51 E. 42d street, New York City	242 17	86 50	328 67	12 69
New York Municipal Ry. Co	Brooklyn		511 27	511 27	19 74
New York, Ontario & Western Ry	Grand Central Terminal Bldg., New York City	1,946 94	2,382 88	4,329 82	167 18
New York & Porto Rico S. S. Co	11 Broadway, New York City		5,209 00	5,209 00	201 13
New York Printers & Bookbinders Mutual Ins. Co	147 Fourth avenue, New York City	431 60	19,684 08	20,115 68	776 71
New York & Queens County Ry. Co	7 and 9 Borden avenue, Long Island City		2,934 91	2,934 91	113 32
New York Railways Co	165 Broadway, New York City	7,302 84	25,891 69	33,194 53	1,281 71
New York & Stamford Railway Co	Portchester		979 48	979 48	37 81
New York State Railways	267 State street, Rochester	1,218 54	5,820 50	7,039 04	271 79
New York Telephone Co	15 Dey street, New York City	11,514 19	18,944 76	30,458 95	1,176 08
New York Transit Co	18 Broadway, New York City	1,023 34	1,553 51	2,576 85	99 50
New York, Westchester & Connecticut Traction Co	2396 Third avenue, New York City				
Niagara Falls Power Co	Niagara Falls		3,151 77	3,151 77	121 70
Niagara Falls (City of)	Niagara Falls				
Niagara Junction Ry. Co	Niagara Falls		225 00	225 00	8 69
Norwich (City of)	Norwich				
Norwood & St. Lawrence R. R. Co	Norfolk				
Northport Traction Co	Pennsylvania Station, New York City				
New York Trap Rock Corp	101 Park avenue, New York City	930 51	2,135 27	3,065 78	118 38
National District Telegraph Co	195 Broadway, New York City				
New England S. S. Co	Room 3839, Grand Central Terminal, New York City	403 20	451 50	854 70	33 00
Newtown Creek Towing Co	9 Jackson avenue, Long Island City		195 86	195 86	7 56
New York Car Wheel Co	15 Forrest avenue, Buffalo		417 50	417 50	16 12
New York Butchers' Dressed Meat Co	499 Eleventh avenue, New York City		505 96	505 96	19 54
Norwich Union Indemnity Co	45 John street, New York City		959 63	959 63	37 05
Niagara Electrical Chemical Co	26th street and Buffalo avenue, Niagara Falls		1,357 65	1,357 65	52 42
Ocean Accident & Guarantee Corp	59 John street, New York City	24,348 18	270,325 59	294,673 77	11,377 97
Ocean Electric Ry. Co	Pennsylvania Station, New York City				
Ogdensburg (City of)	Ogdensburg		403 00	403 00	15 56
Old Dominion S. S. Co	Pier 25, N. R., New York City		5,169 36	5,169 36	199 60
Olean Electric Light & Power Co	111 W. State street, Olean		1,159 10	1,159 10	44 76
Onondaga County	405 Court House, Syracuse		2,275 10	2,275 10	87 85
195 Broadway Corp	15 Dey street, New York City	791 51	1,093 05	1,884 56	72 77
Oneida (City of)	Oneida		34 58	34 58	1 34
Oriskany Malleable Iron Co	Oriskany		289 49	289 49	11 18
Otsego & Delaware Telephone Co	15 Dey street, New York City				
Otselic (Town of)	South Otselic				
Owasco River Railway	24 Genesee street, Auburn		104 28	104 28	4 03

ALLOCATION OF COMPENSATION EXPENSES, JULY 1, 1919 TO JUNE 30, 1920 — (*Continued*)

		Death	Disability	Total	Pro rata share
Panama R. R. & S. S. Co	24 State street, New York City	$200 00	$23 05	$223 05	$8 61
Pelham Park & City Island Ry	2396 Third avenue, New York City				
Pennsylvania R. R. (Eastern Region)	Broad Street Station, Philadelphia, Pa.	1,112 12	39,896 95	41,009 07	1,583 45
Pilgrim Steam Laundry Co	631–649 Seventeenth street, Brooklyn.		30 84	30 84	1 19
Pittsburg, Shawmut & Northern R. R	60 Wall street, New York City	325 96	191 11	517 07	19 97
Petroleum Iron Works of Pa	Sharon, Pa	327 24		327 24	12 64
Pickhands, Mather & Co	Buffalo				
Plattsburg Traction Co	3 Bridge street, Plattsburg				
Port Chester (Town of)	Port Chester				
Post & McCord	101 Park avenue, New York City	1,914 12	7,990 77	9,904 89	382 45
Postal Telegraph & Cable Co	253 Broadway, New York City	100 00	1,026 34	1,126 34	43 49
Potsdam Electric Light & Power Co	Potsdam				
Prince Line, Ltd	34 Whitehall street, New York City				
Pullman Co	Chicago, Ill		10,884 82	10,884 82	420 29
Pierce Arrow Motor Co	1695 Elmwood avenue, Buffalo		1,489 53	1,489 53	57 51
Pennsylvania System (Central Region)	Insurance Department, Philadelphia, Pa	415 40	8,301 83	8,717 23	336 60
Queens County Water Works	Far Rockaway				
Queensboro Gas & Electric Co	1530 Far Rockaway boulevard, Far Rockaway	1,061 51	300 57	1,362 08	52 59
Rapid Transit Subway Construction Co	165 Broadway, New York City	7,859 53	1,780 32	9,639 85	372 21
Richmond Hill & Queens Co. Gaslight Co	176 Remsen street, Brooklyn				
Rochester (City of)	City Hall, Rochester	2,313 79	10,325 57	12,639 36	488 03
Rochester & Syracuse R. R. Co	500 Syracuse Savings Bank Bldg., Syracuse		5,073 94	5,073 94	195 92
Rodgers & Haggerty, Inc	103 E. 125th street, New York City	799 94	3,780 48	4,580 42	176 86
Rogers, Brown Iron Co	312 Erie Co. Bank Bldg., Buffalo	1,256 60	3,224 46	4,481 06	173 02
Royal Indemnity Co	84 William street, New York City	24,207 97	275,167 02	299,374 99	11,559 50
Rutland Railroad	Rutland, Vt		1,782 90	1,782 90	68 84
Richmond Towboat Co	595 Seventh street, Brooklyn				
Rochester District Telegraph Co	195 Broadway, New York City				
Reardon, Inc	237 South street, New York City		210 70	210 70	8 14
Roberts, John A. & Co	193–205 Genesee street, Utica				
Rochester Can Co	109 Hague street, Rochester		1,837 26	1,837 26	70 94
Rome Brass & Copper Co	Rome		3,257 29	3,257 29	125 77
Russell Burdsall & Ward Bolt Co	Port Chester		4,072 21	4,072 21	157 24
Radio Corporation of America	233 Broadway, New York City				
J. W. Sullivan & Co	827 E. 9th street, New York City				
St. Lawrence Water Co	2400 Oliver Bldg., Pittsburg, Pa				
St. Lawrence Transmission Co	2400 Oliver Bldg., Pittsburg, Pa				

St. Lawrence River Power Co	Massena	1,265 40	2,529 25	3,794 65	146 52
Schenectady Railway Co	Schenectady	714 95	4,492 39	5,207 84	201 07
Schoharie Valley R. R. Co	Room 601, D. & H. Bldg., Albany	....	....	....	....
Security Mutual Casualty Co	76 W. Monroe street, Chicago, Ill	1,800 21	11,598 55	13,398 76	517 85
Semet Solvay Co	Solvay	22,522 16	17,291 23	39,813 39	1,537 28
Sheffield Farms Co., Inc	632 W. 125th street, New York City	1,948 16	8,691 59	10,639 75	410 82
Sherrill (City of)	Oneida	....	....	....	....
Singer Sewing Machine Co	149 Broadway, New York City	....	1,437 78	1,437 78	55 52
Skaneateles Railroad Co	Skaneateles	....	....	....	....
Alex. Smith & Sons Carpet Co	Elm street, Yonkers	886 40	6,704 18	7,590 58	293 09
Smith Wheel, Inc	101 N. Geddes street, Syracuse	830 52	4,980 16	5,810 68	224 36
Solvay Process Co	Syracuse	1,547 20	13,055 41	14,602 61	588 84
South Brooklyn Railway Co	Brooklyn	2,060 18	1,912 52	3,972 70	153 39
South Buffalo Railway Co	Lackawanna, Erie County	2,135 73	2,476 76	4,612 49	178 10
Southern Boulevard R. R. Co	2396 Third avenue, New York City	....	....	....	....
South Pacific Co	165 Broadway, New York City	....	13,683 75	13,683 75	528 36
Sperry Gyroscope Co	36 Flatbush avenue, Brooklyn	....	522 91	522 91	20 19
Spool Cotton Co	315 Fourth avenue, New York City	....	....	....	....
Standard Accident Insurance Co	Detroit, Mich	29,556 37	173,121 48	202,677 85	7,825 82
Standard Oil Co. of New York	26 Broadway, New York City	3,397 62	19,535 26	22,932 88	885 49
Southern New York Power Co	Cooperstown	....	....	....	....
Staten Island Rapid Transit Co	295 Broadway, New York City	1,014 03	2,009 85	3,023 88	116 76
Staten Island Shipbuilding Co	Mariners' Harbor, Port Richmond	6,069 91	42,970 72	49,040 63	1,893 56
James Stewart & Co., Inc	30 Church street, New York City	....	479 96	479 96	18 53
Styles & Cash	135 W. 15th street, New York City	....	....	....	....
Syracuse Chilled Plow Co	111 Wyoming street, Syracuse	....	1,569 75	1,569 75	60 61
Syracuse (City of)	308 City Hall, Syracuse	567 39	1,823 02	2,390 41	92 30
Syracuse Lighting Co	335 S. Warren street, Syracuse	622 83	1,431 18	2,054 01	79 31
Syracuse District Messenger Co	195 Broadway, New York City	....	....	....	....
Joseph Stern & Sons	616 W. 40th street, New York City	....	....	....	....
Saratoga Springs (City of)	Saratoga Springs	....	....	....	....
Schoharie (County of)	Central Bridge, Schoharie	....	149 10	149 10	5 76
Staten Island Railway Co	295 Broadway, New York City	....	....	....	....
Schenectady (County of)	Schenectady	....	....	....	....
State Insurance Fund	New York City	209,150 51	1,213,072 26	1,422,222 77	54,915 01
Third Avenue Railway Co	2396 Third avenue, New York City	1 226 60	6,566 35	7,792 95	300 90
Thomson Meter Co	100-110 Bridge street, Brooklyn	....	....	....	....
Thompson Starrett Co	51 Wall street, New York City	836 81	4,644 28	5,481 09	211 61
Jose Torres	21-83 33d street, Brooklyn	....	....	....	....
Travelers' Insurance Co	Hartford, Conn	253,525 97	1,906,151 51	2,159,677 48	83,389 01
Troy (City of)	Troy	....	762 21	762 21	29 43
Troy & New England Ry. Co	598 Broadway, Albany	....	....	....	....
Troy Union Railroad	Union Station, Troy	....	....	....	....
Terminal & Town Taxi Co	310 W. 68th street, New York City	4,764 29	....	4,764 29	183 96
Thurman (Town of) (Warren Co.)	Glens Falls	....	....	....	....
Tuthill, E. B	Montauk, L. I	....	....	....	....
Tracy, W. & J., Inc	1 Broadway, New York City	....	....	....	....

ALLOCATION OF COMPENSATION EXPENSES, JULY 1, 1919 TO JUNE 30, 1920 — (*Concluded*)

		Death	Disability	Total	Pro rata share
Ulster & Delaware R. R.	22 Ferry street, Kingston	$1,357 84	$1,278 40	$2,636 24	$101 79
Union Railway Co. of New York	2396 Third avenue, New York City	2,720 44	5,084 64	7,805 08	301 37
Union Switch & Signal Co	Swissvale, Pa				
Union Tanning Co	17 Battery place, New York City		708 32	708 32	27 35
U. S. Casualty Co	80 Maiden Lane, New York City	19,613 46	119,448 89	139,062 35	5,369 49
U. S. Aluminum Co	Niagara Falls		7,495 93	7,495 93	289 43
U. S. Fidelity & Guaranty Co	Baltimore, Md	65,627 05	412,563 55	478,190 60	18,463 94
U. S. Realty & Improvement Co	949 Broadway, New York City	799 24	6,221 03	7,020 27	271 07
United Traction Co	598 Broadway, Albany	789 49	4,832 40	5,621 89	217 07
U. S. Leather Co	17 Battery place, New York City				
U. S. Aluminum Co	Massena	501 65	3,803 21	4,304 86	166 21
Unexcelled Mfg. Co., Inc	22 Park place, New York City		62 51	62 51	2 41
Utica Mutual Comp. Insurance Co	Utica	21,158 50	361,648 83	382,807 33	14,780 99
Utilities Mutual Insurance Co	5 Nassau street, New York City	15,088 43	41,446 48	56,534 91	2,182 93
Union Tank Car Co	21 E. 40th street, New York City				
United Fruit Co	131 State street, Boston, Mass		45 00	45 00	1 74
Utz & Dunn Co	37 Canal street, Rochester		317 19	317 19	12 25
Union Transport Co., Inc	50 Court street, Brooklyn		3,752 50	3,752 50	144 89
U. S. Mutual Liability Insurance Co	97 E. Howard street, Quincy, Mass		1,135 00	1,135 00	43 82
U. S. Trucking Corp	393 Canal street, New York City		1,175 00	1,175 00	45 37
U. S. R. R. Administration (N. Y. C. R. R.)	Grand Central Terminal, New York City	19,109 55	63,511 74	82,621 29	3,190 18
U. S. R. R. Administration (N. Y. O. & W. R. R.)	Grand Central Terminal, New York City	5,503 69	13,030 70	18,534 39	715 65
U. S. R. R. Administration (Lehigh Valley R. R.)	143 Liberty street, New York City	1,899 48	8,833 26	10,732 74	414 41
Verdon & Co., Inc	Richmond Terrace, W. New Brighton, S. I				
Vacuum Oil Co	61 Broadway, New York City	1,513 46	7,089 53	8,602 99	332 18
Valvoline Oil Co	60 Broadway, New York City				
Van Brunt Street & Erie Basin R. R	264 Van Brunt street, Brooklyn				
Westerlo (Town of)	Greenville				
Western Casualty Co	208 So. La Salle street, Chicago, Ill		7,238 13	7,238 13	279 48
Western Electric Co., Inc	195 Broadway, New York City		7,778 07	7,778 07	300 33
Western New York & Pennsylvania Traction Co	142 N. Union street, Olean		1,166 68	1,166 68	45 05
Western Union Telegraph Co	195 Broadway, New York City	771 26	1,470 53	2,241 79	86 56
Whitmore, Rauber & Vicinus	Rochester		80 00	80 00	3 09
Williams Harvey Corp	Care of Hamlin & Co., 17 Cedar street, New York City		80 00	80 00	3 09
Wabash Railroad	1423 Railway Exchange Bldg., St. Louis, Mo		83 00	83 00	3 20
Warren (County of)	Stony Creek, Warren County				
Wayne Telephone Co	15 Dey street, New York City				

L. E. Waterman Co.	101 Broadway, New York City	....	1,459 79	1,459 79	56 37
Westchester Electric R. R. Co.	2396 Third avenue, New York City	314 36	113 60	427 96	16 52
Westchester Street R. R. Co.	19 Main street, White Plains	....	440 58	440 58	*17 01
Winton Co.	1060 Berea road, Cleveland, Ohio	....	51 60	51 60	1 99
Woodhaven Gas Co.	176 Remsen street, Brooklyn	....	498 45	498 45	19 25
Weber, Knapp Co.	Jamestown	587 26	726 35	1,313 61	50 72
Westcott Express Co.	215 Eleventh avenue, New York City	3,742 33	861 87	4,604 20	177 78
Western (Town of)	Westernville	....	....	....	....
West Virginia Pulp & Paper Co.	Mechanicville	1,312 75	3,079 18	4,391 93	169 58
J. Wood & Sons	15 Maiden Lane, New York City	....	....	....	....
Wilson & Co., Inc.	45th street and First avenue, New York City	3,507 58	5,452 67	8,960 25	345 97
Rudolph Wurlitzer Mfg. Co.	North Tonawanda	....	1,480 61	1,480 61	57 17
Wright & Cobb Lighterage Co.	17 Battery place, New York City	....	....	....	....
Western Electric Co., Inc. (International)	195 Broadway, New York City	....	....	....	....
Yonkers Railroad Co.	2396 Third avenue, New York City	706 72	150 10	856 82	33 08
Yonkers (City of)	Yonkers	....	964 78	964 78	37 25
Zurich General Accident & Liability Co.	175 Jackson boulevard, Chicago, Ill.	18,749 00	145,302 51	164,051 51	6,334 37
Total		$1,627,084 61	$13,036,136 04	$14,663,220 65	$566,177 81

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*Credit of $8.63 to be applied against assessment.

APPENDIX 6

RULES AND PROCEDURE UNDER THE WORKMEN'S COMPENSATION LAW

Effective February 1, 1922

(*References are to Laws* 1914, *Chapter* 41, *as amended*)

Adopted by the Industrial Board of the State of New York, December 21, 1921, pursuant to Chapter 50 of the Laws of 1921, as amended

1. *Employee's First Notice of Injury* (*C*-1).

All employers are required by statute (Section 76, W. C. L.) to keep on hand for the use of their employees, employee's first notice of injury (C-1). If such notice is not readily procurable by the employee or his representative from the employer, then such notice as will meet the requirements of the law shall be given (Section 18, W. C. L.).

2. *Employer's Report of Injuries* (*C*-2).

This should be filed promptly with The Industrial Commissioner. Section 3 of the statutes provides that failure to make such a report within the statutory period of ten days shall be a misdemeanor. These reports will be numbered and indexed immediately upon their receipt by The Industrial Commissioner.

3. *Employer's Supplemental Report of Injury* (*C*-11).

If the employer's first report of injury does not indicate the time of injured employee's return to work, the employer shall promptly, upon the employee's return to work, file a supplemental report on this form, reporting such fact.

4. *Employee's Claim for Compensation* (*C*-3).

Upon the filing of the employer's first report of injury, The Industrial Commissioner will send to the injured employee Form C-3, with instructions that he fill out and file same, and also with instructions for the further preservation of his rights.

5. *Rule for Reckoning Wage Rates.*

(a) If the claimant's total working days per week are 5½ or 6, the daily wage shall be multiplied by 300, the result divided by 52, and two-thirds of this result shall be the weekly compensation rate.

(b) If the claimant's working days per week are 7, it shall be presumed in the absence of substantial evidence to the contrary that the number of days worked during the year immediately preceding the date of accident was 332, and the daily wage shall be multiplied by 332, the result divided by 52, and two-thirds of this result shall be the weekly compensation rate.

(c) Whenever it appears that the claimant has worked more than 332 days in the year immediately preceding the date of accident, the factor used in multiplying shall be the actual number of days worked; and if it shall appear that the claimant has actually worked less than 332 days in the year immediately preceding the accident, but not less than 300 days, the factor used in multiplying shall be such actual number of days worked.

(d) If the claimant's total working days per week are 5, the daily wage shall be multiplied by 260, the result divided by 52, and two-thirds of this result shall be the weekly compensation rate.

(e) If the employee is paid a fixed weekly wage, the weekly compensation rate shall be two-thirds of his fixed weekly wage.

(f) If the employee is paid a fixed monthly wage, his fixed monthly wage shall be multiplied by 12, the product divided by 52, and two-thirds of this result shall be the weekly compensation rate.

(g) In no case shall the compensation rate exceed the maximum provided by law, namely $20 per week; nor shall the compensation rate be less than the minimum provided by law, namely, $8 per week, unless the weekly wage rate be less than $8 in which event the compensation rate shall be the actual weekly wage rate.

(h) In computing the daily wage, account shall be had of the reasonable value of board and lodging, rent, bonuses, tips or other gratuities, overtime, or of any other thing of value or pecuniary advantage enjoyed by the workman as part of his remuneration. The reasonable value of board and lodging or rent shall be deemed to be such sum as it would reasonably cost the workman to furnish the same for himself in the same community and for persons of like standard of living.

(i) In computing the prospective earnings of a minor under Subdivision 5, Section 14, decision must be based upon testimony tending to establish the reasonable expectation of the increase in the wages of the claimant. In cases of temporary disability not amounting to the loss of use of a member or part thereof, no account shall be taken of the probable increased earnings of a minor.

6. *Attending Physician's Report* (*C*-4).

The employer or insurance carrier shall promptly file with The Industrial Commissioner all physicians' reports coming into his or its possession.

7. *Effect of Advance Payments.*

(a) No case in which an advance payment is made shall be barred by the failure of the employee to file a claim for compensation. (See 20-a, W. C. L.).

(b) The payment or receipt of compensation as provided under Section 25 of the Law or under an award of the Industrial Board or a Referee, shall not be considered as a waiver of any question other than the filing of the claim for compensation or notice of accident under Section 18, W. C. L., and shall not preclude any party in interest from later submitting such a case to The Industrial Commissioner, or the Industrial Board as a controverted case.

8. *Hospital Records and Reports.*

All hospital or medical reports in any pending claim for compensation coming into the possession of the employer or insurance carrier shall be filed with The Industrial Commissioner or the Board upon the order of the Board.

9. *Notice that Payment of Compensation has Begun* (*C*-6).

The employer or insurance carrier shall notify The Industrial Commissioner that payment of compensation has begun, without awaiting award of the Referee, unless notice of intention to controvert as provided in Rule 10 is filed. (Section 25, W. C. L., as amended, 1921.) Copy of this notice shall be furnished to the injured workman by the employer or insurance carrier at the time of making the first payment of compensation.

10. *Notice of Stoppage or Suspension of Compensation* (*C*-8).

Immediately upon stoppage or suspension of a payment of compensation, the employer or insurance carrier shall file with The Industrial Commissioner a notice in duplicate to this effect. The Industrial Commissioner, upon receipt of this notice, will immediately forward to the injured employee one of such duplicate notices together with a notice of opportunity to be heard. (C-12).

11. *Notice of Intention to Controvert* (*C*-7).

In case the employer or insurance carrier intends to controvert the right to compensation, he shall either on or before the twenty-fifth day of disability or within ten days after he has knowledge of an injury, file a notice with the Industrial Commissioner that compensation is not being paid and indicating in such notice the reasons for such non-payment. (See Section 25, as amended, 1921, W. C. L.).

12. *Original Hearings Before Board.*

If a controverted case involves a novel question or one involving a question of public policy, or a question of jurisdiction (except a question of due notice of injury) or matters of equal importance, an original hearing may be held before the Industrial Board, provided a written application setting forth the question involved for such hearing is filed by either party with the Industrial Board. It will be discretionary with the Board whether such application will be granted.

13. *Decisions by Referees.*

In hearings of contested cases the Referees shall make a brief summary of the decision upon the contested points. This decision may be given by an oral statement of findings upon the essential points, which statement shall be entered upon the stenographic minutes of the hearing or may be in a brief written statement which shall be signed and filed with the papers in the case. Whenever there is in the file a synopsis of the claim, which appropriately sets forth the material facts, the Referee may sign by name or initial such synopsis, which shall then be deemed his memorandum of decision.

14. *Claim against Third Party.*

In the event of a claim of liability of a third party for an accident, if the employee chooses to pursue his remedy against such third party, pursuant to Section 29, W. C. L., a form known as a "subrogation claim" shall be filed with The Industrial Commissioner by the claimant or his legal representative, to safeguard the claimant's interest in his right to compensation; and immediately upon the filing of such subrogation claim by the claimant or his representative, The Industrial Commissioner shall notify the employer or insurance carrier of the fact of the filing of such notice, in order that the payment of compensation pending the determination of the third party action may be suspended.

15. *Failure of Employer to Make Reports.*

Where it appears that the employer has failed to report an accident, or that the insurance carrier having in its possession a report of accident has failed to forward such report to the Commissioner, and it appears that such failure by the employer or insurance carrier has been without justification, the Commissioner, Board or a Referee shall refer the matter to the Attorney-General for prosecution in accordance with the law: and where it shall appear that the employer or insurance carrier has failed to pay compensation, or to notify the Commissioner that he intends to controvert a claim, or has failed or neglected to perform any other act required by law or these rules, the Commissioner or Board shall cause an investigation of the facts to be made, and shall present such facts for appropriate action and the imposition of the penalties provided by law.

16. *Referee's Calendars.*

There shall be the following Calendars:

(a) Conference Calendar.
(b) Trial Calendar.
(c) Final Adjustment Calendar.
(d) Medical Claim Calendar.
(e) Death Claim Calendar.
(f) Occupational Disease Calendar.

NOTE.— This classification shall be applied in the City of New York. Elsewhere in the state, according to the needs and accommodations of the district, one or more of the above named calendars may be noticed for and held upon the same day.

(a) The Conference Calendar shall consist of all cases that may be disposed of by conference of the parties, without the formal taking of testimony, and of uncontroverted cases in which compensation has been paid, which are called for closing upon due notice to the parties of opportunity to appear and to offer objection to such closing, if they so desire.

(b) The Trial Calendar shall consist of all controverted cases in which evidence is to be taken, except those cases included in the final adjustment calendar. All parties shall be ready, with all witnesses present, in cases on the Trial Calendar, on the day designated in the notice and prepared to dispose of the case on that day.

(c) The Final Adjustment Calendar shall be made up of cases involving the loss or loss of use, in whole or in part, of a member, or serious head or facial disfigurement, after all questions have been disposed of except the extent of disability, and after a sufficient length of time has elapsed for healing and to permit of determination of the permanency and extent of disability or disfigurement; also cases of continuing temporary total or partial disability which in the judgment of the Referee may be closed by agreement; but such agreement shall be approved only when it clearly appears that such agreement is in the interest of justice and that the rights of the claimant have been fully considered and are amply protected by such agreement; or any other case which may be referred by a member of the Board or Referee to this Calendar in which compensation is being paid.

Applications for lump sum settlements or commutations of awards, except in Death Claim cases, for specific loss, shall be heard upon the Final Adjustment Calendar. All such applications shall be in writing, stating the purpose for which the commutation is desired, unless made orally at the time of the making of the final award. No commutation shall be granted in any cases, including Death Claim benefits, unless it appears to be in the interest of justice, and for the best interest of the beneficiary, and can only be made upon proof of facts supporting the conclusion that it is in the interest of justice.

No final award shall be made in the case of the loss or loss of use of a member or of a disfigurement, until at least three weeks have elapsed after the final medical treatment has been rendered.

In all cases wherein the extent of loss or loss of use of a member is to be determined, medical evidence shall be taken by the Referee for his guidance and advice, in addition to his personal examination and observation.

(d) Medical Claim Calendar shall consist of all disputed claims for medical or hospital treatment or other expense.

(e) The Death Claim Calendar shall consist of all claims for death benefits, funeral expenses and payments into the special funds in cases of no dependents. Upon this calendar shall be heard all applications for the commutation of awards of death benefits, or for partial payments in advance, and all questions relating to the requiring of guardianship.

The Referee may, in his discretion, direct the hearing of any such claim or application in a room apart from the general hearing room.

(f) The Occupational Disease Calendar shall consist of all claims for disability or death as the result of an occupational disease.

17. *Industrial Board Calendars.*

Industrial Board Calendars shall be appointed for and held at such time and places within the State as the Board may from time to time direct to meet the convenience and the requirements of the several districts of the State.

Such Board Calendars shall be classified as follows, viz.,

(a) Motion Calendar.
(b) Review Calendar.
(c) Trial Calendar.

NOTE.— In other places than New York City, cases may be noted for hearing upon one or more of the above calendars and heard by the Board, or a member thereof, upon the same day.

(a) Motion Calendar shall consist of all motions or applications made before the Industrial Board or a member thereof, including applications for review, rehearing, opening of defaulted cases and any case not properly placed on a review or trial calendar. No testimony is to be taken in cases upon a Motion Calendar. Applications for a trial by the Industrial Board in the first instance, as provided for in Rule 11, shall be placed upon a Motion Calendar when so directed by the Board or the Chairman thereof.

(b) Review Calendar shall consist of all cases where decisions of Referees in granting or denying an award or other orders in a case are to be reviewed by the Industrial Board.

(c) Trial Calendar shall consist of all cases to be tried in the first instance before the Industrial Board or a member thereof, under General Rule 11, and any other case or hearing ordered by the Board or a member thereof, placed upon such calendar.

NOTE.— The Board construes and classifies the Reference to "Reviews" and "Rehearings" as contained in the Compensation Law and the Labor Law as applied to compensation cases, as follows:

Reviews are regarded in the nature of appeals from the decision or award of the Referee and are intended to be heard solely upon the record of the case as presented before the Referee and upon which he rendered his decision.

Rehearings are construed to indicate a further hearing before a Referee or the Board, for the purpose of taking additional proofs or proof of a change in conditions as a basis for a modification or reversal of decision or award.

18. *Application for Review.*

Application for review by the Industrial Board of decisions of Referees in granting or refusing an award or a review of any other action taken by a Referee shall be made in writing to the Industrial Board or the Chairman, and shall state the specific grounds for such application; and may be accompanied by a reference to or excerpt from the official minutes or of such part thereof as is relevant to the issues raised. Such reviews shall be had and determined upon the evidence and testimony in the record. Such application for review shall be filed within a reasonable time after filing of the decision of the Referee which is sought to be reviewed. Applications for review shall be placed upon a Motion Calendar, and allowance of such review shall be discretionary with the Board.

Upon such review the Board may affirm, reverse or modify any decision or award of a Referee as the law and the facts may require; or may remand the case to the Referee to take further proofs or to further proceed with the case as the Board may direct; or may continue the case for the further consideration of the Board, as may be in the interest of justice.

19. *Application for Rehearing.*

Upon application to the Industrial Board for a rehearing of a claim for compensation or for death benefits, upon the ground,

a. That certain material evidence not available for presentation before the Board or the Referee at the trial is now available, or

b. Upon proof of a change in conditions material to the issue involved, or

c. Otherwise, in the interest of justice, the Industrial Board may, in its discretion, refer a case back to the Board or to a Referee for the taking of testimony or evidence sought to be introduced and for further consideration, or may make such other disposition of the application as may be just in the premises. When a case or any issue therein is so referred to a Referee, he shall thereupon receive such testimony or proofs as are specified in the order of the Board and he may then reconsider the case in the light of all evidence previously introduced, together with that presented at the rehearing and may then render a decision upon the completed testimony and evidence in the case.

Applications under this Rule for a rehearing may be placed upon a Motion Calendar when approved by the Board or the Chairman, upon notice to all parties concerned. Any party in interest to a claim for compensation or for death benefits, may, in the first instance make application for rehearing under this Rule and in conformity to its provision before the Referee who heard the case and rendered decision therein. If such application is denied by such Referee, the same may then be renewed to the Industrial Board, in which case, the application to the Board shall state that a previous application has been made to the Referee and that the same has been denied.

20. *Notices of Hearings.*

All notices of hearings upon any calendar shall specifically state the calendar upon which the case will appear and the purpose of the hearing, and shall be mailed to the claimant, the employer and the insurance carrier at least eight days before the date specified in the notice of hearing; but in the discretion of the presiding Referee, or member of Board, any issue in a case may be considered and passed upon though not specifically indicated in the notice of hearing, if the speedy administration of justice without prejudice to any party will thereby be substantially served.

21. *Hearings by Referees.*

Every hearing upon a claim for compensation or for death benefits held before a Referee or a member of the Board, shall be conducted in an orderly manner, all witnesses testifying under oath (or by affirmation) and a record of the proceedings shall be made and kept. Such hearings shall be conducted in such manner as to ascertain the substantial rights of the parties and the Referees or the Board shall not be bound by common law or statutory rules of evidence or by technical or formal rules of procedure. (Section 68 W. C. L.)

Where claimant is not represented the Referee shall examine the claimant and his witnesses and cross-examine the employer or carrier's witnesses on claimant's behalf.

22. *Medical Examination.*

Medical examination provided for by Section 19 of the Workmen's Compensation Law shall be conducted only in the presence of the physicians of the Department, a Referee or one or more members of the Board; except that the claimant, employer or carrier may have one representative present at such examination, who may or may not be a physician. A claimant who refuses to submit to medical examination, as required by Section 19 of the Workmen's Compensation Law, may subject himself to suspension of the rights to prosecute his claim for compensation for the period of such refusal. (Section 19, W. C. L.)

23. *Reports by Referees.*

Referees shall from time to time report to the Chairman of the Industrial Board any difficulties in the administration of the law or rules, and also may submit to said Chairman legal questions of frequent occurrence on which they desire guidance in rulings so as to maintain a uniform policy and practice in the administration of the Compensation Law.

24. *Statements, Certificates, Etc.*

All written statements, certificates or reports filed or submitted in any claim shall be a part of the record and shall be given such consideration as the Board or Referee shall deem proper subject to the right of any party in interest to challenge or controvert the same.

25. *Application of Rules.*

The Board may in its discretion in exceptional cases where the rights of a party would be seriously prejudiced by the enforcement of one or more of the foregoing rules, suspend or modify the application of any such rule.

RULES GOVERNING ACTUARIAL PROCEDURE IN COMPUTED LUMP SUM SETTLEMENT

26. No award shall be made for a lump sum payment on account of all, or any part, of the remaining compensation due any claimant, unless a definite award has previously been made to such claimant. By a definite award is meant an award in which compensation payments terminate at a definite date or in the event of the death or remarriage of such claimant.

27. Every award for a lump sum payment on account of all, or any part, of the remaining compensation due any claimant shall be based upon a computation by the Actuary.

28. The Actuary shall base his compensation upon the Survivorship Annuitants' Table of Mortality, the Remarriage Tables of the Dutch Royal Insurance Institution and interest at three and one-half per centum per annum, provided that this interest rate shall not apply to computations made under Rule 33 hereof.

29. The Tables printed in the June, 1917, issue of "The Bulletin" of the New York State Industrial Commission and "Table of the Present Value of $1 per week at 3½% Compounded Annually" (now in use by the Department) are hereby declared to be in conformity with the requirements of the foregoing Rule 28.

30. The Actuary shall make his computations as of the date the lump sum is awarded by the Industrial Board or its authorized representative, except that in lump sum settlements under Section 17, the computation shall be made as of the date of the death of the injured employee, insofar as such computation applies to dependents who were not residents of the United States or of Canada at the time of such death.

31. In computing a lump sum settlement to a widow for part of the future payment due her, the Actuary shall not take into account the probability of the widow's receiving the two years' remarriage payment provided in Section 16-2; but in computing such settlement to a widow for all future payments the Actuary shall take such remarriage probability into account.

32. In computing a lump sum settlement to one or more dependents in cases involving the maximum compensation of 66⅔% of wages, the Actuary shall consider that the same proportionate reduction is to apply to the compensation rate of each dependent.

33. In computing the interest due as the result of an award being affirmed upon appeal to the Appellate Division the Actuary shall use an interest rate of six per centum per annum.

34. In making any computation involving a recovery by a claimant from a third party under Section 29, the Actuary shall treat the amount so recovered as though it were a lump sum settlement resulting from an award by the Industrial Board or its authorized representative.

35. In computing a lump sum settlement to a claimant who has been awarded compensation for permanent partial disability under Subdivision 3 of Section 15 on account of an injury received on or after May 4, 1920, the Actuary shall assume the award to survive unless the employer or his insurance carrier has, at the time of awarding the lump sum, established the fact that the claimant is then without wife or child under the age of eighteen years.

36. The foregoing Rules and Procedure under the Workmen's Compensation Law shall take effect February 1, 1922.

[L. S.]

JOHN D. HIGGINS,
Chairman.
RICHARD H. CURRAN.
ROSALIE LOEW WHITNEY.

Attest:
C. A. MEEKER,
Secretary.

APPENDIX 7

LIST OF SELF-INSURERS AS OF JUNE 30, 1921

Aaronson, Israel	3009 Atlantic Ave., Brooklyn, N. Y.
Adams Express Co	51 Broadway, New York City.
Aldrich Paper Co	Natural Dam, New York.
Allegany County Telephone Co	120 N. Main St., Wellsville, N. Y.
Alpha Portland Cement Co	Easton, Pennsylvania.
Aluminum Company of America	Niagara Falls, N. Y.
Aluminum Manufactures, Inc	2210 Harvard Ave., Cleveland, Ohio.
American Brake Shoe & Foundry Co	30 Church St., New York City.
American Brass Co	414 Meadow St., Waterbury, Conn.
American Bridge Co	30 Church St., New York City.
American Can Co	120 Broadway, New York City.
American Car & Foundry Co	165 Broadway, New York City.
American Cigar Co	111 Fifth Ave., New York City.
American Express Co	65 Broadway, New York City.
American Laundry Machinery Co	Cincinnati, Ohio.
American Locomotive Co	30 Church St., New York City.
American Railway Express Co	65 Broadway, New York City.
American Sugar Refining Co	117 Wall St., New York City.
American Telephone & Telegraph Co	15 Dey St., New York City.
American Tobacco Co	111 Fifth Ave., New York City.
American Wood Working Machinery Co	591 Lyell Ave., Rochester, N. Y.
Amsterdam, City of	Amsterdam, N. Y.
Anchor Line	25 Broadway, New York City.
Arcade & Attica Railroad Corp	Arcade, N. Y.
Art in Buttons, Inc	Champeney Terrace, Rochester, N. Y.
Ashtabula & Buffalo Dock Co	Western Reserve Bldg., Cleveland, Ohio.
Ashtabula Steamship Co	Western Reserve Bldg., Cleveland, Ohio.
Atlas Furniture Co	Jamestown, N. Y.
Auburn & Syracuse Electric R. R. Co	82 Genesee St., Auburn, N. Y.
Auerbach, D. & Sons	636 Eleventh Ave., New York City.

Bailey, E. & Sons	Division St. & West Ave., Patchogue, L. I.
Baltimore & Ohio Railroad Co	Baltimore & Charles Sts., Baltimore, Md.
Barbour Flax Spinning Co	420 Grand St., Patterson, N. J.
Barrett, Nephews & Co	334 Canal St., New York City.
Bartlett, Hayward Co	Scott & McHenry Sts., Baltimore, Md.
Bastian Brothers Co	63–117 Mt. Hope Ave., Rochester, N. Y.
Bayley & Sons, Inc	105 Vanderveer St., Brooklyn, N. Y.
Bay Ridge Operating Co	34 Whitehall St., New York City.
Beacon, City of	Beacon, N. Y.
Belt Line Railroad Co	2396 Third Ave., New York.
Berman Brothers	405 East 107th St., New York City.
Black & White & Town Taxis, Inc	328 West 68th St. & 227 E. 64th St., New York City.
Bluff Point Land Improvement Co	32 Nassau St., New York City.
Booth & Flinn, Ltd	17 Battery Place, New York City.
Borden Co	108 Hudson St., New York City.
Borden's Farm Products Co., Inc	63 Vesey St., New York City.
Bossert & Sons, Inc., Louis	1335 Grand St., Brooklyn, N. Y.
Boston & Albany Railroad	Grand Central Terminal, New York City.
Boston & Maine Railroad	Boston, Massachusetts.
Bouker Contracting Company	21 State St., New York City.
Bretagne Company (Hotel Savoy)	5th Ave. & 59th St., New York City.
Brewer–Titchener Corporation	Cortland, N. Y.
Brigaton-by-the-Sea, Inc	162 Remsen St., Brooklyn, N. Y.
Bronx Parkway Commission	Bronxville, N. Y.
Brooklyn City Railroad Co	168 Montague St., Brooklyn, N. Y.
Brooklyn Cooperage Co	117 Wall St., New York City.
Brooklyn Edison Co., Inc	360 Pearl St., New York City.
Brooklyn Heights Railroad Co	85 Clinton St., Brooklyn, N. Y.
Brooklyn, Queens Co. & Suburban Railroad Co.	85 Clinton St., Brooklyn, N. Y.
Brooklyn Rapid Transit Co	85 Clinton St., Brooklyn, N. Y.
Brooklyn Union Gas Co	180 Remsen St., Brooklyn, N. Y.
Brown Car Wheel Works, Inc	466 Howard St., Buffalo, N. Y.
Buffalo & Susquehanna Railroad Co	980 Ellicott Square, Buffalo, N. Y.
Buffalo Brake Beam Co	32 Nassau St., New York City.
Buffalo, City of	Buffalo, N. Y.
Buffalo Dry Dock Co	191–301 Ganson St., Buffalo, N. Y.
Buffalo, Rochester & Pittsburgh Railway Co.	155 Main St., West Rochester, N. Y.
Burns Brothers	30 Church St., New York City.
Bush, Roberts & Schaefer Co	332 S. Michigan Ave., Chicago, Ill.
Bush Terminal Co	100 Broad St., New York City.

Carroll Towing Co., Inc.	Foot Court St., Brooklyn, N. Y.
Cazenovia, Village of	Cazenovia, N. Y.
Central Hudson Steamboat Co	Third & Smith Sts., Newburgh, N. Y.
Central Leather Co	17 Battery Place, New York City.
Central New England Railway Co	Grand Central Station, New York City.
Central Railroad Co. of N. J	143 Liberty St., New York City.
Chateaugay Ore & Iron Co	Lyon Mountain, N. Y.
Chester, Town of	Warren County, N. Y.
Chicago Bridge & Iron Works	105th & Throop Sts., Chicago, Ill.
Childs Co	200 Fifth Ave., New York City.
Clark Company, W. N	333 Hollenbeck St., Rochester, N. Y.
Cleary Brothers	116 Broad St., New York City.
Clyde Steamship Co	Pier 36, North River, New York City.
Coastwise Lumber & Supply Co	17 Battery Place, New York City.
Cohocton, Town of	Cohocton, N. Y.
Cohoes, City of	City Hall, Cohoes, N. Y.
Colonial Navigation Co	Pier 39, N. R., N. Y. City.
Commercial Cable Co	253 Broadway, New York City.
Commonwealth & Dominion Line, Ltd	10 Bridge St., New York City.
Compagnie Générale Transatlantique	19 State St., New York City.
Complete Construction Corporation	162 Remsen St., Brooklyn, N. Y.
Compressed Cork Co	Ossining, N. Y.
Coney Island & Brooklyn Railroad Co	85 Clinton St., New York City.
Coney Island & Gravesend Railway Co	85 Clinton St., New York City.
Consolidated Cigar Corporation	40 East End Ave., New York City.
Consolidated Gas Company	130 East 15th St., New York City.
Consolidated Telegraph & Elec. S'way Co.	54 Lafayette St., New York City.
Cornell Steamboat Co	22 Ferry St., Kingston, N. Y.
Corning & Painted Post St. Ry. Co	400 E. Water St., Elmira, N. Y.
Cortland, City of	Cortland, New York.
Cranford, Frederick L., Inc	177 Montague St., Brooklyn, N. Y.
Cronin, Barth S. Co., Inc	573 Clinton St., Brooklyn, N. Y.
Crucible Steel Company of America	Oliver Bldg., Pittsburg, Pennsylvania.
Cunard Steamship Co., Ltd	21 State St., New York City.
Cushman's Sons, Inc	49 Manhattan St., New York City.

Degnan Contracting Co	30 E. 42d St., New York City.
Delaware & Hudson Co	32 Nassau St., New York City.
Delaware, Lackawanna & West. R. R. Co.	90 West St., New York City.
Delaware & Northern R. R. Co	Margaretville, N. Y.
Dietz Company, R. E	60 Laight St., New York City.
Dold, Jacob, Packing Co	745 William St., Buffalo, N. Y.
Donner Steel Co., Inc	475 Abbott Road, Buffalo, N. Y.
Dry Dock, East B'way & Battery R. R. Co.	2396 Third Ave., New York City.
Dunn & McCarthy	41-49 Washington St., Auburn, N. Y.
DuPont DeNemours & Co., E. I	DuPont Building, Wilmington, Delaware.
Dutton, Francis O	Chelmsford, Massachusetts.

Eastman Kodak Co	Rochester, N. Y.
Easton, Town of	Easton, N. Y.
East River Stevedoring Corporation	39 Broadway, New York City.
Eastern Malleable Iron Co	Troy, N. Y.
Elba, Town of	Elba, N. Y.
Electrical Testing Laboratories	80 East End Ave., New York City.
Electric Carbon Co	2400 Oliver Bldg., Pittsburgh, Pa.
Elmira Water Board	City Hall, Elmira, N. Y.
Elmira Heights, Village of	Elmira Heights, N. Y.
Empire Carting Co	13 Park Row, New York City.
Empire City Subway Co., Ltd	15 Dey St., New York City.
Empire Engineering Co., Inc	6 Church St., New York City.
Empire Repair & Electric Welding Co., Inc.	44 Whitehall St., New York City.
Empire State Railroad Corp	Lakeshore Junction, Syracuse, N. Y.
Equitable Life Assurance Society of U. S.	120 Broadway, New York City.
Erie Foundry Co	50 Dowey Ave., Rochester, N. Y.
Erie Railroad Co	50 Church St., New York City.
Exchange Buffet Corporation	52 William St., New York City.

Feifer, B. & Co	427 E. 76th St., New York City.
Ferguson Steel & Iron Corporation	74 Stanley St., Buffalo, N. Y.
Fifth Avenue Coach Co	10 E. 102d St., New York City.
Finch, Pruyn & Co., Inc	1 Glen St., Glens Falls, N. Y.
Fire Insurance Salvage Corps of Brooklyn.	123 William St., New York City.
Flatbush Gas Co	1024 Flatbush Ave., Brooklyn, N. Y.
Fonda, Johnstown & Gloversville R. R. Co.	Gloversville, N. Y.
Ford Motor Company of Delaware	3040 Woodward Ave., Detroit, Mich.
Fort William Henry Hotel Co	32 Nassau St., New York City.
Forty-Second St., Manhattanville & St. Nicholas Ave. R'way Co	2396 Third Ave., New York City.
Freeport, Village of	Freeport, N. Y.
Fuller Co., George A	111 Broadway, New York City.
Fulton County Gas & Electric Co	18 E. Fulton St., Gloversville, N. Y.

Fulton County (its several Towns & Cities)	Fulton County, N. Y.
General Cigar Co., Inc	119 W. 40th St., New York City.
General Electric Co	Schenectady, N. Y.
General Ice Co., Inc	Bay Shore, L. I., N. Y.
Getty, Hugh, Inc	359 W. 26th St., New York City.
Gleason Works	1000 University Ave., Rochester, N. Y.
Glen Cove Railroad Co	Glen Cove, Nassau County, N. Y.
Glens Falls, City of	Glens Falls, New York.
Glen Telephone Co	6 Church St., Johnstown, N. Y.
Goodrich Rubber Co., B. F	Akron, Ohio.
Gould Coupler Co. & Gould Storage Battery Co.	30 E. 42d St., New York City.
Grand Trunk Railway Co. of Canada	Grand Trunk General Bldg., McGill St., Montreal, Canada.
Grasselli Chemical Co	Cleveland, Ohio.
Green Island, Village of	Green Island, N. Y.
Greenwich, Town of	Greenwich, N. Y.
Greenwich & Johnsonville Ry Co	32 Nassau St., New York City.
Greece, Town of	Charlotte Station, Rochester, N. Y.
Halcomb Steel Co	Syracuse, N. Y.
Hampshire Pearl Button Co	1133 E. Main St., Amsterdam, N. Y.
Hardenbergh, Town of	Seager, Ulster County, New York
Hardman, Peck & Co	433 Fifth Ave., New York City.
Hard Manufacturing Co	117 Tonawanda St., Buffalo, N. Y.
Harris Structural Co	1480 Broadway, New York City.
Hastings Railway Co., Inc	2393 Third Avenue, New York City.
Heinz Co., H. J., The	Pittsburgh, Pennsylvania.
Hercules Explosives Corporation	Wilmington, Delaware.
Hercules Powder Co	Valley Falls, N. Y.
Herkimer, County of	Herkimer, N. Y.
Herkimer, Town of	Herkimer, N. Y.
Hinkle Iron Co., The	534 W. 56th St., New York City.
Hogan, F. & Sons, Inc	Produce Exchange Bldg., 1920 Bway, New York City.
Holbrook, Cabot & Rollins Corp	52 Vanderbilt Ave., New York City.
Holmes Electric Protective Co	26 Cortlandt St., New York City.
Horicon, Town of	Horicon, N. Y.
Horn, W. O., & Bros., Inc	846 Broadway, New York City.
Hudson & Manhattan R. R. Co	30 Church St., New York City.
Hudson Navigation Co	Pier 32, N. R., New York City.
Hudson River Day Line	Desbrosses St. Pier, New York City.
Hudson Valley Railway Co	32 Nassau St., New York City.
Hygeia Ice Co	305 E. 80th St., New York City.
Industrial Chemical Co	200 Fifth Ave., New York City.
Intall, Joseph & Co., Inc	163 Pacific St., Brooklyn, N. Y.
Interborough Rapid Transit Company	165 Broadway, New York City.
Interlake Steamship Co	182 Ohio St., Buffalo, N. Y.
International Cork Co	99 Sutton St., Brooklyn, N. Y.
International Harvester Co	606 S. Michigan Ave., Chicago, Ill.
International Harvester Co. of America	606 S. Michigan Ave., Chicago, Ill.
International Mercantile Marine Co	9 Broadway, New York City.
International Silver Company	Meriden, Conn.
International Western Electric Co	195 Broadway, New York City.
Iroquois Natural Gas Co	Iroquois Bldg., 46 Church St., Buffalo, N. Y.
Iroquois Pulp & Paper Co	Thomson, Washington Co., N. Y.
Ithaca, City of	Ithaca, N. Y.
Jamaica Gas Light Co	120 Union Ave., Jamaica, L. I.
Jamestown Chair Co	20 Union St., Jamestown, N. Y.
Jamestown, City of	Jamestown, N. Y.
Jamestown Telephone Corporation	210 Pine St., Jamestown, N. Y.
Jewell Steel & Malleable Co	373 Hertel Ave., Buffalo, N. Y.
Judge, J. W	186 Main St., Buffalo, N. Y.
Kellogg & Sons, Inc., Spencer	98 Delaware Ave., Buffalo, N. Y.
Kellogg Products, Inc	110 Delaware Ave., Buffalo, N. Y.
Kennedy, Wm. J. Co	518-20 W. 22d St., New York City.
Kinney, C. P., Co	307 East 80th St., New York City.
Knickerbocker Ice Co	1480 Broadway, New York City.
Knickerbocker Silver Co	Port Jervis, N. Y.
Koppers Seaboard Coke Co., Inc	504 Union St., Brooklyn, N. Y.
Lackawanna Bridge Co	Bell & Abby, Buffalo, N. Y.
Lake Champlain Transportation Co	Whitehall, N. Y.
Lake George Steamboat Co	Town of Caldwell, Lake George.
Lalance & Grosjean Manufacturing Co	299 Broadway, New York City.
Larchmont, Village of	Larchmont, N. Y.

Lehigh & Hudson River Railway Co	Warwick, Orange Co., N. Y.
Lehigh & New England Railroad Co	437 Chestnut St., Philadelphia, Pa.
Lehigh Valley Railroad	143 Liberty St., New York City.
Levering & Garrigues Co	552 W. 23d St., New York City.
Ley, Fred T., & Co., Inc	495 Main St., Springfield, Mass.
Loeser, Frederick & Co	Fulton St., Brooklyn, N. Y.
Long Beach, Village of	Nassau County, Long Beach, N. Y.
Long Island Electric Railway Co	7-9 Borden Ave., Long Island City, N. Y.
Long Island Railroad Co	Pennsylvania Station, New York City.
Lowville & Beaver River Railroad Co	Shady Ave., Lowville, N. Y.
Luzerne, Town of	Luzerne, N. Y.
Luckenbach Steamship Co	44 Whitehall St., New York City.

Mallory Steamship Co	Pier 36, N. R., New York City.
Massena Terminal Railroad Co	Massena, N. Y.
Massey-Harris Harvester Co., Inc	Batavia, N. Y.
Medina, Village of	Medina, N. Y.
Merchants Despatch Transportation Co	6 Beaver St., New York City.
Metal Package Corporation of New York	506 Fifth Ave., New York City.
Middlesex, Town of	Middlesex, N. Y.
Miller, Franklin, Basset & Co	347 Madison Ave., New York City.
Montgomery, County of	Fonda, N. Y.
Morris & Co	United Stock Yards, Chicago, Ill.
Morse Dry Dock & Repair Company	Ft. 56th St., Brooklyn, N. Y.
Mountain Home Telephone Co	72 Clinton St., Plattsburgh, N. Y.
Mount Vernon, City of	City Hall, Mount Vernon, N. Y.
Muchattoes Lake Ice Co	14 Water St., Newburgh, N. Y.
Mundet & Sons, L. Inc	King & Ferris Sts., Brooklyn, N. Y.
Mutual Life Insurance Co. of New York	34 Nassau St., New York City.

McClintic-Marshall Co	1201 Oliver Bldg., Pittsburgh, Pa.
McGovern, Patrick	50 E. 42d St., New York City.
McGraw-Hill Co., Inc	10th Ave. & 36th St., New York City.
McWilliams Bros., Inc	1 Broadway, New York City.

Nassau County Railway Co	Pennsylvania Sta., New York City.
Nassau Electric Railroad Co	85 Clinton St., Brooklyn, N. Y.
Nassau Light & Power Co	Mineola, Long Island.
National Biscuit Co	409 W. 15th St., New York City.
National Conduit & Cable Co	41 Park Row, New York City.
National District Telegraph Co	195 Broadway, New York City.
National Enameling & Stamping Co	411 Fifth Ave., New York City.
National Lead Co	111 Broadway, New York City.
National Tube Co	Frick Bldg., Pittsburg, Pa.
New England Steamship Co	3617 Grand Central Terminal, N. Y. C.
Newton Gas Co	Grand St. & Hoffman Blvd., Elmhurst, L. I.

New York Air Brake Co	165 Broadway, New York City.
New York Board of Fire Underwriters	123 William St., New York City.
New York Car Wheel Co	15 Forest Ave., Buffalo, N. Y.
New York Central Railroad Co	Grand Central Terminal, New York City.
New York, Chicago & St. Louis R. R. Co.	Hickox Bldg., Cleveland, Ohio.
New York, City of	Municipal Bldg., Borough of Manhattan, New York City.

New York City Interborough Ry. Co	2396 Third Ave., New York City.
New York Consolidated Railroad Co	85 Clinton St., Brooklyn, N. Y.
New York & Cuba Mail Steamship Co	Pier 14, E. R., New York City.
New York & Long Island Traction Co	9 Borden Ave., Long Island City, N. Y.
New York & Queens County Ry Co	9 Borden Ave., Long Island City, N. Y.
New York & Stamford Railway Co	Port Chester, N. Y.
New York Dock Co	44 Whitehall St., New York City.
New York Knife Co	225 Fifth Ave., New York City.
New York Municipal Railway Corp	85 Clinton St., Brooklyn, N. Y.
New York, New Haven & Hartford R. R. Co.	3617 Grand Central Terminal, N. Y.
New York, Ontario & Western Ry. Co	3714 Grand Central Terminal, N. Y.
New York Railways Co	165 Broadway, New York City.
New York State Railways	267 State St., Rochester, N. Y.
New York Telephone Co	15 Dey St., New York City.
New York Transit Co	26 Broadway, New York City.
New York Trap Rock Corporation	26 Cortland St., New York City.
N. Y., Westchester & Conn. Trac. Co	2396 Third Ave., New York City.
Niagara Electro Chemical Co	100 William St., New York City.
Niagara Falls, City of	Niagara County, N. Y.
North-Eastern Construction Co	101 Park Ave., New York City.
Northport Traction Co	Northport, Long Island.
Norwich, City of	Norwich, N. Y.
Norwood & St. Lawrence Railroad Co	Norfolk, N. Y.

Ocean Electric Railway Co	Penn. Sta., 7th Ave. & 33d St., N. Y. C.
Ogdensburg, City of	Ogdensburg, N. Y.
Oneida, City of	Oneida, N. Y.

One-Ninety-Five Broadway Corporation	15 Dey St., New York City.
Onondaga, County of	Court House, Syracuse, N. Y.
Oriskany Malleable Iron Co	Oriskany, Oneida Co., N. Y.
Otsego & Delaware Telephone Co	Oneonta, N. Y.
Otselic, Town of	South Otselic, N. Y.
Owasco River Railway	Auburn, N. Y.

Panama Railroad Co	63 Wall St., New York City.
Pennsylvania Railroad Co	Broad St. Sta., Philadelphia, Pa.
Petroleum Iron Works Co. of Pa	Box 18, Sharon, Pennsylvania.
Pickands, Mather & Co	Western Reserve Bldg., Cleveland, Ohio.
Pierce Arrow Motor Car Co., The	1695 Elmwood Ave., Buffalo, N. Y.
Pilgrim Steam Laundry Co	631–649 17th St., Brooklyn, N. Y.
Pittsburg, Shawmut & Northern R. R. Co.	60 Wall St., New York City.
Plattsburg Traction Co	Plattsburg, N. Y.
Port Chester, Village of	Rochester, N. Y.
Port Henry Iron Ore Co	2 Rector St., New York City.
Postal Telegraph-Cable Co	253 Broadway, New York City.
Post & McCord, Inc	101 Park Ave., New York City.
Pratt & Letchworth Co	189 Tonawanda St., Buffalo, N. Y.
Prince Line, Ltd	34 Whitehall St., New York City.
Pullman Co	79 E. Adams St., Chicago, Ill.
Pure Oil Co	Columbus, Ohio.

Queens Borough Gas & Electric Co	347 Central Ave., Far Rockaway, N. Y.
Queens County Water Co	49 Wall St., New York City.

Radio Corporation of America	233 Broadway, New York City.
Rapid Transit Subway Construction Co.	165 Broadway, New York City.
Realty Associates	162 Remsen St., New York City.
Richmond Hill & Queens Co. Gas L. Co.	176 Remsen St., Brooklyn, N. Y.
Richmond Towboat Company, Inc	595 Seventh St., Brooklyn, N. Y.
Roberts, John A. & Co	193–205 Genesee St., Utica, N. Y.
Rochester Can Co	89 Hogue St., Rochester, N. Y.
Rochester. City of	Rochester, N. Y.
Rochester District Telegraph Co	Ellwanger & Barry Fireproof Bldg., Rochester, N. Y.
Rochester & Syracuse Railroad Co	500 Syracuse Savings Bank Bldg, Syracuse, N. Y.
Rodgers & Hagerty, Inc	103 E. 125th St., New York City.
Rogers–Brown Iron Co	53 Erie County Bank Bldg., Buffalo, N. Y.
Rome Brass & Copper Co	Rome, N. Y.
Rome Manufacturing Co	Railroad St., Rome, N. Y.
Russell, Burdsall & Ward Bolt & Nut Co.	Port Chester, N. Y.
Rutland Railroad Co	Grand Central Terminal, New York City.

St. Lawrence River Power Co	2400 Oliver Bldg., Pittsburgh, Pa.
Saratoga Springs, City of	Saratoga Springs, N. Y.
Schenectady, County of	Schenectady, N. Y.
Schenectady Railway Co	Schenectady, N. Y.
Schoharie, County	Schoharie, N. Y.
Schoharie Valley Railway Co	Schoharie, N. Y.
Semet–Solvay Co.	Syracuse, N. Y.
Sheffield Condensed Milk Co	524 W. 57th St., New York City.
Sheffield Farms Co., Inc	170 Manhattan St., New York City.
Sherrill, City of	Oneida, New York.
Sinclair Refining Co	111 W. Washington St., Chicago, Ill.
Singer Sewing Machine Co	149 Broadway, New York City.
Skaneateles Railroad Co	Skaneateles, N. Y.
Smith & Sons Carpet Co., Alexander	Yonkers, N. Y.
Smith Wheel, Inc	101 N. Geddes St., Syracuse, N. Y.
Solvay Process Co	Syracuse, N. Y.
South Brooklyn Railway Co	85 Clinton St., Brooklyn, N. Y.
Southern Boulevard Railroad Co	2396 Third Ave., New York City.
South Buffalo Railway Co	Lackawanna, Erie Co., N. Y.
Southern New York Power Co	Cooperstown, N. Y.
Sperry Gyroscope Co	36–48 Flatbush Ave. Ext., Brooklyn, N. Y.
Spool Cotton Co	315 Fourth Ave., New York City.
Standard Oil Company of New York	26 Broadway, New York City.
Staten Island Rapid Transit Ry. Co	295 Broadway, New York City.
Staten Island Shipbuilding Co	Port Richmond, Staten Island, N. Y.
Stern, Joseph & Son, Inc	616 W. 40th St., New York City.
Steuben, Town of	Remsen, R. F. D. No. 2, N. Y.
Stewart & Company, Inc., James	80 Church St., New York City.
Submarine Boat Corporation	5 Nassau St., New York City.
Sullivan, John W., Co	827 E. Ninth St., New York City.
Syracuse Chilled Plow Co	111 Wyoming St., Syracuse, N. Y.
Syracuse, City of	City Hall, Syracuse, Onondaga Co., N. Y.
Syracuse District Messenger Co	Syracuse, N. Y.
Syracuse Lighting Co	335 S. Warren St., Syracuse, N. Y.

Third Avenue Railway Co	130th St. & 3d Ave., New York City.
Thomas Meter Co. of N. J	100–110 Bridge St., Brooklyn, N. Y.
Thompson–Starrett Co	51 Wall St., New York City.
Thurman, Town of	Warren County, Athol, N. Y.
Torres, Jose	21-83 33d St., Brooklyn, N. Y.
Transcontinental Oil Co	223 Fourth Ave., Pittsburgh, Pa.
Troy & New England Railway Co	598 Broadway, Albany, N. Y.
Troy, City of	Troy, N. Y.
Troy Union Railroad	Grand Central Terminal, New York City.

Ulster & Delaware Railroad Co	22 Ferry St., Kingston, N. Y.
Unexcelled Manufacturing Co	22 Park Place, New York City.
Union News Company	105 Reade St., New York City.
Union Railway Co. of N. Y. C	2396 Third Ave., New York City.
Union Switch & Signal Co	Swissvale. Pennsylvania.
Union Tank Car Co	21 E. 40th St., New York City.
Union Tanning Co	17 Battery place. New York City.
United Fruit Co	131 State St., Boston, Mass.
United States Aluminum Co	2400 Oliver Bldg., Pittsburgh. Pa.
United States Hame Co	135 Tonawanda St., Buffalo, N. Y.
United States Leather Co	17 Battery Place, New York City.
United States Trucking Corporation	393 Canal St., New York City.
United Traction Co	598 Broadway, Albany, N. Y.
Utz & Dunn Co	37 Canal St., Rochester, N. Y.

Vacuum Oil Co	Rochester Sav. Bank Bldg., Rochester, N. Y.
Valvoline Oil Co	11 Broadway, New York City.
Van Brunt St. & Erie Basin R. R. Co	264 Van Brunt St., Brooklyn, N. Y.
Verdon & Co., Inc	Richmond Terrace, West New Brighton, N. Y.

Wabash Railway Co	St. Louis. Mo.
Warren, County of	Warren, N. Y.
Waterman Co., L. E	191 Broadway, New York City.
Wayne Telephone Co	Newark, N. Y.
Weber–Knapp Co	Jamestown, N. Y.
Westchester Electric Railroad Co	2396 Third Ave., New York City.
Westchester Street Railroad Co	White Plains, N. Y.
Westcott Express Co	65 Broadway, New York City.
Westerlo. Town of	Greenville. N. Y.
Western, Town of	Westernville. N. Y.
Western Electric Co	195 Broadway, New York City.
Western New York & Penn. Traction Co.	142 N. Union St., Olean, N. Y.
Western Union Telegraph Co	195 Broadway, New York City.
West Virginia Pulp & Paper Co	200 Fifth Ave., New York City.
Whitmore, Rauber & Vicinus	279 South Ave.. Rochester. N. Y.
Williams, Harvey Corporation	111 Broadway, New York City.
Wilson & Co., Inc	45th St. & 1st Ave.. New York City.
Winton Co	1060 Berea Road, Cleveland. Ohio.
Wisconsin Granite Co	133 Washington St., Chicago, Ill.
Witherbee, Sherman & Co	Port Henry, N. Y.
Wood. J. R. & Son	170 Broadway, New York City.
Woodhaven Gas Light Co	14–20 Union Ave., Jamaica, L. I.
Wurlitzer, Rudolph, Manufacturing Co	North Tonawanda, N. Y.

Yonkers, City of	Yonkers. N. Y.
Yonkers Railroad Co	2396 Third Ave., New York City.

PART II

REPORT OF BUREAU OF INSPECTION

REPORT OF DIRECTOR

IN CHARGE OF BUREAU OF INSPECTION

To the Industrial Commissioner:

There is submitted herewith the report of the Bureau of Inspection for the fiscal year 1920–1921, covering the period for the twelve months ended June 30, 1921.

Appended are the complete statistical tables showing in full detail the work performed by the several divisions of the Bureau of Inspection.

The work accomplished shows a generally satisfactory condition as compared with previous years, and in volume and standard of work achieved has reached the highest point of efficiency since the organization of the Bureau of Inspection. These results were made possible by the diligence of the field and office forces who have performed their duties in a creditable manner. The duties and responsibilities with which the several divisions of the Bureau of Inspection are charged are so numerous that it is necessary to maintain an efficient system of conducting the work. The methods employed have proven very satisfactory in accomplishing the greatest results in the task of enforcing the many provisions of the Labor Law assigned to the Bureau of Inspection. While our present system is giving satisfaction, we are constantly working to improve and develop its efficiency.

Comparison in the following table shows the increase since 1915 in some of the important details of factory inspection work, and the decrease in the number of complaints filed:

STATISTICS OF FACTORY INSPECTION

	Year 1915	Year 1921	Percentage of increase
Regular inspections	40,996	72,773	77.5
Special inspections	6,869	18,365	167.3
Compliance visits	62,299	105,897	69.9
Complaints filed and investigated	2,296	816	64.4*

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* Decrease.

COMPLAINTS

The effective enforcement of the law is illustrated in the number of complaints. In a sense they are a barometer of the standard of enforcement. In each division of the Bureau the number of complaints has steadily declined in number since 1915. This is so, although by the changes in the law and codes the power and scope of the Bureau's work has been enlarged considerably.

The following shows the number of factory and mercantile establishments to which complaints related:

Fiscal Year	Factories	Mercantile Establishments
Oct. 1, 1915–June 30, 1916	3,583	1,193
July 1, 1916–June 30, 1917	2,539	1,426
July 1, 1917–June 30, 1918	2,016	1,388
July 1, 1918–June 30, 1919	1,297	1,191
July 1, 1919–June 30, 1920	1,206	937
July 1, 1920–June 30, 1921	816	851

The nature and the number of the complaints filed for the year ended June 30, 1921, relating to factory and mercantile establishments are indicated in the following tables:

Year ended June 30, 1921	FACTORIES				MERCANTILE ESTABLISHMENTS			
	Number	Sustained	Not sustained	Thereof anonymous	Number	Sustained	Not sustained	Thereof anonymous
Administration	6	5	1	4	5	3	2	5
Sanitation ..	734	429	305	190	165	78	87	120
Accident prevention ...	77	53	24	16	7	4	3	6
Fire prevention	29	16	13	15	0	0	0	0
Children ...	205	90	115	93	287	122	165	199
Women and minors ...	100	25	75	65	129	38	91	94
Day of rest.	34	19	15	13	251	109	142	221
Miscellaneous.	30	16	14	11	7	1	6	6
Not within jurisdiction of Labor Law.	51	0	51	29	0	0	0	0
†	1,266	653	613	436	‡851	355	496	651

† These complaints were of violations in 816 different factories.

‡ These complaints were of violations in 851 different mercantile establishments.

FACTORY INSPECTION DIVISION

The results achieved by the Division of Factory Inspection are very gratifying. The volume of the work can be seen by a study of the general table appended on page 117.

The number of orders issued is shown in the table and it will be noticed that the number of compliances is in excess of the orders issued. This is a very satisfactory result as it enables the Division to gain on the orders that have to be carried over from one fiscal year to the next. While this carry-over is necessary, the number is not large considering the great number of orders issued each month. The outstanding orders not complied with in the factory division on June 30, 1921, was 21,364. This indicates how systematically the compliance with orders is handled. To make inspections and issue orders would not accomplish much, if we did not secure compliance with the orders issued. To secure the results indicated in the figures shown, requires eternal vigilance and it may be said that the factory owners in the main realize the wisdom of complying with the provisions of the law on which the orders are based. Considering the number of factories to be inspected and the number of orders issued we have very little difficulty in securing the results shown in the work achieved.

While this tabulation referred to relates to factories only, the same results are obtained in connection with mercantile establishments in proportion to the force available for that class of work, and those owning property or conducting the mercantile establishments emulate the spirit shown by those operating factories.

HEALTH AND SAFETY ORDERS

This class of orders represents the constructive work of the Bureau of Inspection. The following table sets forth very clearly the number of orders issued and compliances secured, regarding health and safety orders, by the Division of Factory Inspection for the past eight years, covering the period from October 1, 1913, to June 30, 1921.

If a study of these figures is made one will get a fair idea of the excellent progress achieved in promoting and developing proper sanitary standards and safety appliances for the protection of those employed, and the modification or elimination of the hazards of industry.

This table shows that in the past eight years there were 1,332,866 compliances secured with health and safety orders in factories. To secure these results required a vast amount of work on the part of the inspection force, and the expenditure of a large amount of money to make the necessary changes in compliance with orders. In the results secured the property and factory owners have done their part in a commendable manner, and in the main have done it in a spirit of cooperation with the Inspection Bureau in maintaining the standards provided by the Labor Law. Those to whom orders are issued have the right of appeal for variation, under section 30 of the Labor Law, and for a review of rules or orders, under section 110 of the Labor Law. In comparison with the large number of orders issued, the number appealing from the requirements is very small. It is true we have to threaten to prosecute, in some instances, before compliances are secured. This last class and those whom we really have to prosecute before compliance is secured constitute a small group, considering the many thousands to whom orders are issued. Generally there has been speedy compliance, and there is every indication that those owning factory property and those operating factories are willing to do their part in the campaign to promote the health and safety of those employed in industry.

ORDERS ISSUED TO FACTORIES BY THE BUREAU OF INSPECTION, AND COMPLIANCES THEREWITH, IN NEW YORK STATE FROM OCTOBER 1, 1913, TO JUNE 30, 1921, BOTH INCLUSIVE

WHOLE NUMBER OF ORDERS AND COMPLIANCES

FISCAL YEAR	Orders	Compliances
Oct. 1, 1913–Sept. 30, 1914	287,893	179,826
Oct. 1, 1914–Sept. 30, 1915	163,968	135,697
Oct. 1, 1915–June 30, 1916	*116,399	*125,889
July 1, 1916–June 30, 1917	173,982	206,625
July 1, 1917–June 30, 1918	135,703	152,361
July 1, 1918–June 30, 1919	160,681	155,746
July 1, 1919–June 30, 1920	187,272	179,688
July 1, 1920–June 30, 1921	190,506	197,034
Total	1,416,354	† 1,332,866
Orders unenforceable by Department (See footnote †)	....	62,124
Total orders disposed of	....	1,394,990

ORDERS AND COMPLIANCES RELATING TO —

	SANITATION		ACCIDENT PREVENTION	
	Orders	Compliances	Orders	Compliances
Oct. 1, 1913–Sept. 30, 1914	74,359	44,094	70,768	40,286
Oct. 1, 1914–Sept. 30, 1915	41,418	34,247	50,742	38,129
Oct. 1, 1915–June 30, 1916	*32,038	*31,944	*36,483	*41,634
July 1, 1916–June 30, 1917	53,555	63,201	46,288	60,486
July 1, 1917–June 30, 1918	48,735	54,849	39,730	47,475
July 1, 1918–June 30, 1919	55,486	53,658	59,732	56,379
July 1, 1919–June 30, 1920	73,004	67,290	61,332	60,732
July 1, 1920–June 30, 1921	68,359	72,710	61,948	62,925
Total	446,954	421,993	427,023	408,046
Orders unenforceable by Department (See footnote †)	....	16,179	....	8,323
Total orders disposed of	....	438,172	....	416,369

ORDERS AND COMPLIANCES RELATING TO —

	FIRE PROTECTION		ALL OTHER SUBJECTS	
	Orders	Compliances	Orders	Compliances
Oct. 1, 1913–Sept. 30, 1914	100,305	58,947	42,461	36,499
Oct. 1, 1914–Sept. 30, 1915	33,710	27,378	38,098	35,943
Oct. 1, 1915–June 30, 1916	*18,433	*22,699	*29,445	*29,612
July 1, 1916–June 30, 1917	9,684	17,481	64,455	65,457
July 1, 1917–June 30, 1918	6,022	8,397	41,216	41,640
July 1, 1918–June 30, 1919	4,656	4,956	40,757	40,733
July 1, 1919–June 30, 1920	6,397	5,324	46,589	46,342
July 1, 1920–June 30, 1921	5,484	6,560	54,765	54,839
Total	184,641	151,742	357,736	351,065
Orders unenforceable by Department (See footnote †)	....	31,393	....	6,249
Total ordered disposed of	....	183,135	....	357,314

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* For nine months, the fiscal year having been changed by law from October 1–September 30 to July 1–June 30.

† Exclusive of 62,124 orders (issued and acted upon previous to May 1, 1916, since which date similar orders have been recorded as complied in the monthly and annual reports of the Department of Labor), in which jurisdiction was transferred by law to New York City departments or the illegal conditions ceased by reason of modifications in the Labor Law and Industrial Code, removals, fires, or accompanying circumstances such as to make the original orders no longer necessary to be enforced by the Department of Labor. These figures bring the aggregate number of orders disposed of up to 1,894,990 leaving a total of 21,364 orders outstanding on July 1, 1921. Included in these 21,364 uncomplied orders are 5,255 orders that were issued in the month of June, 1921, and the impossibility of securing compliance with the major portion of these latter orders before July 1 is readily apparent.

CONTROL OF DUST, GASES AND FUMES

The Bureau is accomplishing excellent results in solving the many problems and difficulties encountered in the installation of exhaust systems for the successful removal of dust, gases and fumes. The plan and scope of our method of handling this phase of our activities have proved very satisfactory to manufacturers and contractors. We have, by the cooperation of the Inspection Bureau and the contractors installing exhaust and ventilating systems, accomplished results which are very gratifying and which have resulted in a high standard of installation, which is effective in improving working conditions and thus protecting the health of the workers.

In former reports we have outlined our methods and there is no need to repeat them again in this report. The result of our policy has been to protect the interests of the manufacturer by seeing that the contractor installs a proper system, efficient and capable of correcting the existing conditions, and thus the manufacturer is not spending his money for a poor system which would not be capable of doing the work in a satisfactory and efficient manner.

MERCANTILE DIVISION

The work accomplished by the Division of Mercantile Inspection was most gratifying. We succeeded in covering a greater number of establishments than in any year since the organization of the Division. In addition there was a general increase in the orders issued, and compliance with 114,274 orders was secured. At the close of the fiscal year there were very few uncomplied orders outstanding. The figures of the work accomplished are clearly set forth in the appended tables showing the general volume of the work achieved by the Bureau of Inspection.

Generally, merchants conducting mercantile establishments are realizing the wisdom of complying with the provisions of the law and this is particularly so in regard to the employment of children under age, or without certificates of employment, and the employment of women and children illegal hours. The figures for this year show that there has been a considerable decrease in this class of violation, compared with the previous years, although there were many thousand more establishments visited. This condition is a vast improvement over that prevailing a few years ago, and shows the benefits of the educational methods adopted to acquaint the merchants with the provisions of the law and the necessity of complying with same. Of course, when they are obstinate and defiant they are prosecuted, but in this line of our activities there has been a great reduction in the number of prosecutions.

HOMEWORK DIVISION

The results of the activities of this division are set forth in condensed form in the table that follows. A study of this table will show that the amount of inspection work performed by the field force is the greatest recorded in any year since the organization of the division in 1899. The inspection of 25,089 separate licensed buildings; the investigation of 5,471 unlicensed buildings on suspicion that the law was being violated therein; the investigation of 2,588 new applications for licenses; and the inspection of a total of 305,802 separate living apartments in all buildings visited, both licensed and unlicensed, besides numerous other time consuming duties as shown in the table, go to make up the total of recorded services performed by the inspection force of the Homework Division for the year just closed. During the year the field work has been greatly complicated and the enforcement of the law made more difficult on account of the prevailing general housing conditions. This was especially true in the matter of securing compliance with sanitary orders issued against licensed houses. The rent quarrels between the owners of tenement houses and their tenants are to some slight extent reflected in the table showing the large number of orders issued (3,964), as well as the number of visits (9,050) made by the inspectors to secure compliance with these orders. While the housing conditions were general throughout the State, in New York City these conditions were intensified because of the greater density of population — two and sometimes three families were found occupying living quarters intended for one family. This condition of overcrowding was greatly aggravated by reason of the fact that owners and agents refused to do anything towards the proper upkeep of their property.

This situation affected our work very seriously because the inclination of the tenement house owner in his desire to force up rents was to deny his tenants any favors or any privileges which were his to grant. This attitude of tenement house owners and their agents in refusing to undertake repairs or to even have the ordinary every-day cleaning done has given us great trouble. This is true especially in licensed tenements against which sanitary orders had to be issued. A glance at the table will show that this year we have cancelled 3,515 licenses and revoked 313, a total of 3,828 licenses, the removal of which in nearly every instance is attributable to the existing rent war between landlords and their tenants. The results before us as shown by the combined reports of the field workers is that the sanitary upkeep of tenement houses is bad and in a number of cases very bad and consequently very dangerous to the community at large. The following orders issued in one instance clearly illustrate these conditions:

1. Clean the public halls on all floors by painting the walls, ceiling and woodwork of same.
2. Paint the kitchens in both front apartments on first floor.
3. Paint all rooms in all apartments front and rear on second and third floors.

4. Paint the kitchens in all apartments front and rear on fourth and fifth floors.
5. Scrub clean and keep clean the interior of waterclosets on all floors and in the basement.
6. Scrub clean and keep clean the floors and stairs of public halls.
7. Clean cellar and yard, removing all dirt and refuse.

Persons, owners or agents responsible for the care and upkeep of property affected by our orders offered as excuses the high cost of material and labor, the courts' adverse rulings on rents, the acts of careless or dirty tenants and some say plainly that they will not comply with any orders of any kind from any source unless the tenants agree to pay an advance in their rents. The following memorandum filed by one of our inspectors is indicative of this attitude on the part of tenement house owners with which we have to deal:

MR. O'LEARY:

Mr. C., owner of ——— E. 143d street has finally signed authorization but he would not sign for Mrs. H. who made the application because there was some trouble about rent.

Mrs. H. had to pay him two dollars per month advance rent before he would sign for her. She is a poor woman whose husband is ill. Some friends have sent him to the mountains for a year and she must support two small children. It is too bad such landlords do not come under some law that would punish them for such actions.

It is an every-day experience having owners call or write to have existing licenses removed, thus depriving their tenants of the privilege of doing any kind of public work at home in the hope that this will cause the tenants to agree to pay an advance in their rent. When a license is removed a notice is sent to both the tenant and to the employer notifying them of that fact. If the tenant succeeds in obtaining work from some other employer and persists in working, then the owner complains to the Department demanding that we stop the illegal acts of the tenants. We, in turn, must follow the directions given in the law, visit the premises complained of and file a report. If a violation is found, a personal notice is served on the owner under section 365, placing on him the duty of either relicensing his house or hauling the offending tenants to court in dispossess proceedings. We merely cite these circumstances as an indication of the many difficulties which the division has to contend with. The following letter from one landlord illustrates the above statement:

NO. 884 ——— AVENUE,
BROOKLYN, N. Y.

GENTLEMEN: I want to complain about a tenant in No. 183——— street, Ridgewood, for doing homework without permit. Please attend to this.

(Signed) OWNER.

This landlord had previously consented to the licensing of his house. Then when he could not get more rent from the tenant, he ordered the license to be cancelled, which was done. Then, when the tenant succeeded in obtaining work from some other employer he sent in this complaint.

The strike in the clothing industry which started last December has since that date caused a large decrease in homework. This is most noticeable in localities where ready-made clothing is manufactured in large quantities. This condition is reflected in the excessive number of licensed tenement houses (12,043) given in the table in which no work was found going on at the time visitation was recorded by the inspectors. It can be noticed in the increase in other lines of homework, notably in lace embroidery, bead work and miscellaneous articles. The worst effect of the clothing strike on homeworkers is found in the marked decrease in the prices paid for finishing garments. The high peak of prices reached three years ago has been wholly lost to the homeworkers, and those who are now able to obtain work are back to pre-war prices and even below the prices paid then. Overcoats that paid as high as forty cents per garment to finish have now fallen to half that price. Men's jackets that paid as high as seventeen cents each have dropped back to eight or nine cents and very little work is to be had at that price.

The following is a summary of the work performed by the field force of the Division of Homework Inspection during the year beginning July 1, 1920, and ending June 30, 1921:

Number of outstanding licenses on July 1, 1920, for whole State	18,445
Number of new applications for licenses made during the year, including 16 applications pending at close of year	2,588
Number filed in New York City	2,382
Number granted in New York City	2,276
Number filed in up-State localities	190
Number granted in up-State localities	189
Number of licenses cancelled for sanitary or other reasons	3,515
Number of licenses revoked for purely sanitary reasons	313
Number of applications cancelled	137
Number of applications pending at close of report year	18
Number of outstanding licenses at close of year June 30, 1921	17,082
Net decrease in licensed buildings for year	1,363
Number of licensed tenement houses inspected and reinspected	24,930
Number of licensed rear shop buildings inspected	159
Total of all inspections of licensed buildings	25,089
Licensed tenement houses receiving a second inspection during the year	6,744
Number of licensed tenement houses in which no person was found at work at time of visit	12,043
Total number of observation reports made of houses suspected of having work done in them, as well as dwelling houses reported from the investigation of manufacturers' lists	5,471
Number of violations of law reported requiring application of tenement tag	1,179
Number of violations referred to counsel	114
Number of violations prosecuted	*63
Number of convictions secured	48
Amount of fines imposed by courts	$710

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* Including two cases that were pending on June 30, 1920.

Violations of law upon which prosecutions were based:	
Children under 14 working	9
Children between 14 and 16 years working without certificates	1
Prohibited articles, working on	12
Unlicensed houses	40
No label on articles	1
Number of hours spent by inspectors in prosecuting cases	382½
Number of separate complaints received, all of which were investigated and reported on	221
Total number of separate apartments visited and inspected	305,802
Total number of apartments in which work was reported	17,537
Number of persons found at work in licensed houses	24,297
Number of cases of disease found in homes where work was found going on	0
Number of cases of disease found in licensed tenements	8
Number of all orders issued	3,964
Number of compliances secured	4,278
Number of visits made by inspectors to secure compliances	9,050
Total number of all children found at work illegally in home	*518
Females	436
Males	82
Number of children between 14 and 16 found working	100
Females	95
Males	5
Number of children working and attending school	460
Number of children working and not attending school	58
Ages of children under 14 years —	
4 years	1
6 years	22
7 years	17
8 years	28
9 years	39
10 years	64
11 years	58
12 years	90
13 years	99

The time at which these children were found is recorded as follows:

Children found in morning up to 12 o'clock	193
Children found employed between 12 and 3 P. M.	122
Children found employed between 3 and 6 P. M.	193
Children found employed between 6 and 8 P. M.	9
Children found employed after 8 P. M.	1

The children were found working on the following:

Article of embroidery and lace	90
Adult clothing	208
Prohibited articles	9
Flowers and feathers	65
Miscellaneous articles, paper novelties, etc	146

Of the 518 children found at work illegally in homes, 475 were in New York City and 43 were found in up-State localities.

Child labor as found in the home shows a marked falling off this year when compared with that reported the year previous. Last year the reports showed a total of 781 children at work in the homes while this year's report shows a total of 518 children so employed,

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* There were 447 children found illegally employed in licensed tenements; 362 of these were under 14 years of age and 85 between 14 and 16 years of age.

a net decrease of 263. This decrease is shown to be wholly in New York City, up-State places showing about same numbers as the year before.

This showing is very gratifying in view of the fact that the inspectors covered 6,528 more houses this year than were inspected last year; also in view of the additional fact that the inspectors visited 49,080 more separate apartments this year than were visited the previous year. While some of this decrease in child labor can be charged to the stoppage of work due to the clothing strike, the major part of the decrease is directly due to the vigilance of the men and the women in the field.

It may be of general public interest to state here the different races the people belong to who are found engaged in doing this so-called homework. In times past the only persons who did work in the home — that is, made a business of it — were the custom tailor, dressmaker and the milliner, all private and personal work. while the workers were as a rule native Americans. Today the number of different articles that are made cover a wide range outside of custom work. The people who are engaged in the work are largely foreigners and the number of Americans is negligible in comparison. The different nationalities and races employed in licensed tenements are compiled from the daily reports of the inspectors and are as follows:

Italians	11,388	Norwegians	13
Jews	7,526	Danes	10
Americans	2,365	Syrians	17
Germans	997	Cubans	16
Greeks	342	Roumanians	14
Hungarians	256	Swiss	17
Irish	152	Scotch	17
Austrians	122	Belgians	7
French	141	Porto Ricans	3
Poles	282	Turks	2
Negroes	115	Holland-Dutch	2
Russians	95	Serbians	3
Spaniards	73	Galicians	3
Bohemians	79	Portuguese	1
English	56	Pomeranians	14
Slavs	33	Lithuanians	44
Armenians	27	Mexicans	1
Swedes	55	Ukrainians	1
Finns	9		

It may also be of interest to state the different articles which furnish the employment we find in the home, and the number of persons found engaged on them in licensed tenements:

Articles of individual custom clothing	8,518
Articles of ready-made or shop finished clothing	6.540
Flowers	1,148
Feathers	76
Articles of lace and embroidery	4.161
Gloves	479
Articles for children	57
Carding buttons, hooks and eyes	84

Different and small articles not included in the above list	3,234
Total of all persons found employed in the licensed tenement houses in this State	24,297

INDUSTRIAL HYGIENE DIVISION

This report deals with the seventh year of the Division's work and comparison with the reports of former years shows the progress made.

The activities of the Division are shown by the following subject matters dealt with, namely, the investigation of special trades and processes, the investigation of cases of occupational diseases, together with physical examination of children (males and females) in factories, the examination of plans filed relating to ventilating systems, and special work, principally of a technical nature, involving the use of instruments of precision.

Investigation of Special Trades and Processes

During the year the Division undertook an investigation relating to unsafe practices in general, common in most factories, with the idea of determining to what extent employees were injured through the medium of so-called carelessness, of not having instructions as to the proper method of running certain machines, through slipping, falling, fooling, failure to understand orders, through overcrowded machinery, etc. During the course of this investigation there has been a large amount of valuable data received. However, the scope of the investigation is so great that before a complete survey can be made the work must be continued.

In connection with an investigation of working conditions of stone cutters who were subjected to the presence of large volumes of hard stone dust, disengaged in the process of cutting and surfacing stone used for monumental and structural purposes, there have been studies made of devices for controlling dust disengaged in the process of surfacing granite.

Valuable data, including photographs of the devices, were obtained, which, when applied to the above processes, will materially aid to improve the working conditions and lessen the danger to workers engaged in dressing stone, many of whom in the past have suffered from such diseases as bronchitis, laryngitis, conjunctivitis and tuberculosis.

A study of woodworking plants was made during the year for the purpose of controlling the fire hazard and protecting the health of employees in such establishments. This work is completed and an illustrated pamphlet is ready for publication as a means of showing manufacturers, contractors and engineers the methods used in certain factories where the successful removal of dust, chips, blocks and shavings has been accomplished.

Special Bulletin 101, entitled "Asphyxiation in Garages and Other Automobile Accidents," has likewise been in demand, with the result that numerous garages have adopted forced means of ventilation for the removal of the poisonous gases found in garages as a result of the incomplete combustion of gasoline from automobile engines.

Special Bulletin 102, entitled " Devices for Sanitary Control of Material Disengaged in Industrial Processes," has fifty-seven illustrations which depict in half-tones the best devices used by many manufacturers of the State to remove dust, gases, vapors and fumes. This pamphlet has been eagerly sought by the engineering profession, as well as by many contractors and manufacturers.

Investigation of Occupational Diseases and Physical Examination of Factory and Mercantile Workers

The medical inspectors attached to the division were constantly engaged in the investigation of conditions under which certain workers toiled who were reported to be suffering from occupational disease reported by physicians who had been called for medical treatment.

In numerous instances as a result of investigations made in the establishments in which such persons had been employed and where unhygienic conditions existed, recommendations were made or orders were issued to correct the conditions so as to prevent a recurrence of similar diseases.

In addition to reported cases, the medical inspectors visited numerous factories throughout the State where wood alcohol, paints, lacquers, metallic lead and dry colors were used in connection with the various manufacturing processes, with the idea of detecting cases of disease occasioned by their employment. If cases were found, remedial measures were taken to prevent recurrence of similar cases by recommendations or the issuance of the necessary orders.

The examination of children between the ages of 14 and 16 years, having certificates of employment in mercantile establishments in the State, was undertaken to determine the physical fitness of the children for their work. These examinations were, in all cases, conducted at the establishments where the children were employed, and the result of these examinations shows the necessity of advising the children as to habits of living and personal hygiene. Along this line 485 physical examinations were made in New York City. There were also a large number of physical examinations of women made and advice was given them in numerous instances.

Examination of Plans for Ventilating Systems

Every order relating to general ventilating, local ventilation and exhaust systems issued by the Bureau of Inspection requires plans to be filed in ink, in triplicate, for approval, before changing, repairing or providing new systems. All plans relating to the above orders were referred to the Division of Industrial Hygiene for approval. When disapproved all errors that existed were noted and corrections to be made were clearly pointed out in accompanying letters to the proprietor, contractor or engineer whereby it became an easy matter to amend or correct them and receive approval upon refiling. Weekly conferences of those members of the division to whom this work was assigned were held, whereat the more difficult problems which had been met during the week were discussed. These conferences resulted in the dissemination of information relating to the specific problems encountered, which became general information to all, and could be applied to other problems as they would occur. It occasionally became necessary, where problems of an intricate or specific nature presented themselves within factories, to arrange conferences at the factories between the firm, contractor or engineer and a representative of the division, whereby in every instance the difficult problems in question were solved with gratifying results to all concerned.

The time devoted to this branch of sanitary work has resulted in the installation throughout the State of more durable ventilating systems, with higher percentages of efficiency, giving greater protection to those who were obliged to work under conditions where the presence of dust, fumes, gases, heated air and vapors had previously permeated the atmosphere of the establishment.

Special Work

During the year there were 684 matters referred to the Division. The greater part of these were in the form of requests for technical evidence relating to orders which had been issued by the Department and involved the necessity of conducting physical examinations of persons affected by the orders issued; the making of air tests and chemical analyses of material handled; analyses of wall dust and other materials involving microscopical examinations; the carrying on of photometric measurements to determine the intrinsic brilliancy of various types of light units and of existent light flux on the working plane in various trades and processes. This was done by means of our own photometers in the field and necessitated the work being carried on at night.

Photographic work formed a part of this special work, relating to accidents, guards, unsanitary and sanitary conditions, special devices, exhaust system work, types of ventilating hoods and processes involving the unsafe way of handling material and tools. From year to year the collection of photographs and lantern slides has been added to, which serves as a means of conveying information relating to the Labor Law and the Industrial Code.

Several hundred of these photographs were exhibited at the State Fair held at Syracuse, together with lantern slides exhibited in a stermotorgraph. This exhibit attracted great attention, particularly by those interested in devices relating to factory conditions.

Some of the photographs were reproduced in half-tones in several bulletins prepared by the Division during the year as a means to convey to the engineering profession, manufacturers and contractors, suggestions as to the equipment of machines in various ways to comply with the law and code.

Such instruments as thermometers, hygrometers, air meters, speed meters, pitou tubes and tachometers, were indispensable in our work as a means toward definitely determining temperatures, percentages of relative humidity, speed of fans, capacities of fans, velocities of air in ducts of ventilating systems and speed of belts, which often were used in connection with cases of prosecution begun by the Bureau of Inspection.

The following figures recapitulate the work done during the year, which has exceeded in volume that of any other year of the Division's existence:

Resume of the work undertaken and completed:

Bulletins in preparation	2
Bulletins prepared to date	2
Bulletins issued during past year	2
Photographs taken in connection with work	96
Chemical analyses made in connection with investigations	120
Special inspections	4
Complaints investigated	4
Compliance visits	12
Trade disease investigations	17
Special investigations	5,533
Physical examinations	1.512
Physical determinations	2.137
Research investigations	899
Special details	1,006
Plans examined	1,136

DIVISION OF BOILER INSPECTION

There were inspected during the fiscal year 2,705 boilers of all classes coming within the provisions of section 204 of the Labor Law, and 395 compliance visits were made to see that orders issued were complied with.

It was necessary to attach "unsafe" tags to 32 boilers on account of their unsafe condition and owners or operators having failed to comply with the provisions of the law.

There were 3,688 investigations and information calls made relative to boilers.

Fees paid for the boilers inspected amounted to $12,465.

During the year there has been but one boiler explosion in New York State; the tubes in a water tube boiler ruptured, scalding three of the boiler attendants.

Twenty boilers have been condemned owing to the general deterioration and lap seam cracks, and in each instance the use of the boilers was discontinued.

The insurance companies have filed reports relative to the inspection of 23,315 boilers.

Boiler manufacturers have filed data reports relative to 3,072 boilers manufactured for installation within the State.

Owing to the limited number of inspectors it has been impossible to make an annual internal and external inspection of all boilers as required by law. For the same reason no attempt has been made to inspect the numerous small boilers such as are used on clothes pressing machines and vulcanizing moulds. It has been recommended that a code applying to miniature boilers be adopted. The majority of this type of miniature generators (cast iron vulcanizers) that are now in use constitute a serious menace, especially owing to the fact that many of them are operated by inexperienced persons who do not realize the hazard from the improper operation of such generators.

Attention is called to the need of a uniform method of inspection as provided for in the boiler code, but not complied with in the cities of New York, Yonkers, Mt. Vernon and Niagara Falls. In New York City the Police Department applies hydrostatic pressure to all boilers, but does not make internal inspection of boilers as required by the provisions of the boiler code. Therefore, where boilers are not regularly inspected by insurance companies, no internal inspection is made and conditions are not noted which might warrant a reduction in the pressure. In other cities which have their own local inspectors, a hydrostatic pressure test is applied to such boilers as are not inspected by authorized insurance companies. Section 204 of the Labor Law provides that cities in which boilers are regularly inspected by competent inspectors acting under authority of local laws or ordinances shall be exempt from inspection by the Department of Labor, but that said cities shall enforce the provisions of the boiler code. Rule 800 of the code provides that all boilers carrying a steam pressure of more than 15 pounds per square inch shall be subjected to internal and external inspection annually. The method enforced in these cities of applying hydrostatic pressure tests is antique and unsafe, inasmuch as many boilers have been ruined by being stressed beyond the point of elasticity by the use of hydrostatic pressure applied by inexperienced or careless persons. In the city of New York, except in the instances mentioned with reference to the method of inspection, the Police Department has endeavored to comply with the requirements of the code with reference to installation and fittings, and is co-operating with the Division of Boiler Inspection. However, no effort is being made by local inspectors of other cities to see that the requirements of the boiler code are complied with. It is, therefore, recommended that section 204 of chapter 50, Laws of 1921, be revised to apply to all cities except New York City, and that New York City be required to revise its method of inspection to conform to the State law.

This recommendation is prompted by the need of uniform inspection throughout the State. This is also due to the fact that each of these municipalities and the State require separate inspections if the boiler in question is to be moved and operated at various points within the State. This causes needless expense and some dissatisfaction but is necessary when boilers are removed from the municipalities mentioned to places under State inspection where they must be inspected as required by law. Further dissatisfaction is created owing to the municipality not enforcing the requirements of the code with reference to fittings and appliances.

The Board of Examiners, as provided for in rule 8 of the boiler code for examining candidates desiring to secure a certificate of competency to inspect boilers in New York State, holds examinations every ninety days. Out of a total of forty-three candidates who took the examination, fifteen failed to pass the examination. The members of this board serve without compensation and are deserving of thanks for the interest and attention they have given to these examinations.

MINES, TUNNELS AND QUARRIES

This work has progressed in the usual efficient manner, and during the year there were three hundred mine and quarry inspections, and thirty regular and two hundred and seventy-nine special inspections of tunnels and caissons. All of this class of inspection requires careful and painstaking work in order to observe conditions that will eliminate all hazards and promote safe working conditions, so that the workers in these industries may be afforded the full measure of protection contemplated by the Labor Law and the code rules.

ACCIDENT PREVENTION

The results secured in accident prevention are very encouraging, and the diligent efforts of past years are showing gratifying results. While we have continued our vigorous policy relating to accident prevention, we have had the assistance of the enlightened and progressive managers of factory and mercantile establishments, who are fully alive to the wisdom and necesssity of the prevention of needless industrial accidents and the reduction or elimination of the unnecessary waste caused by industrial injuries. We fully realize that the guarding of machinery in unsafe places is but incident to the ideal for which we all strive. It can be said that in New York State we have obtained splendid results and from now on we should devote our energies along educational lines to a greater degree than has been done in the past. In many of the larger plants excellent results have been obtained by instructing the employee in the safe practices incident to the particular industry, the type of machinery in use and the practical and common sense way of doing the job to be done. In many industries this can be done because of the ability to employ those who can do it and because the management knows it pays. But what is to be done in the many thousands of establishments not progressive enough to do the job, or those not in a position to employ those who know what to do, and the other class who do not care — that type who tell you, " I have paid my insurance premium, why should I worry? " Because we realize the need for greater efforts along educational lines promoting safe practices, we started to study the problem as it affects industry generally, with the hope of making available valuable information and data for those conducting industry with the purpose of promoting and developing safe practices, and in this manner eliminate many thousands of injuries occurring annually and which can not be prevented by the guarding of machinery, ways and appliances.

Considering the character of these injuries, it would be advisable for the State to provide the means of properly promoting this work along the many avenues open to obtain excellent results.

To conduct a proper educational campaign to promote safe practices in the industries of New York would require the expenditure of money not available at present, but it is work that should be done as speedily as possible. The employees and managers of many establishments will readily co-operate with the Department of Labor to develop the work along practical lines. There is every indication of the need for methods that will reduce to a minimum those injuries that are occurring which cannot be prevented by the installation of safeguards. They are the result of lack of knowledge as to how to perform the work in a proper manner. To reduce this hazard, we must carefully study the industries producing accidents, the causes, and the best methods of instruction to prevent recurrence of those which may be prevented by the skillful and safe manner of doing the work. Money spent in this line of accident prevention work would tend to the production of large returns to the State, in addition to preventing much suffering and needless loss to the injured, as well as to industry.

PROSECUTIONS

There is little need for saying much regarding prosecutions. The tables appended give a clear review of this phase of the Bureau's activities.

The following tables will furnish comparisons for the past seven years, relative to the number of prosecutions completed and the amount of fines imposed:

	FISCAL YEAR 1915 (12 months)		FISCAL YEAR 1916 (9 months)	
	Prosecutions completed	Fines imposed	Prosecutions completed	Fines imposed
Factories	845	$4,387	1,923	$9,856
Mercantile establishments	876	5,842	840	6,790
Total	1,721	$10,229	2,763	$16,646

	FISCAL YEAR 1917 (12 months)		FISCAL YEAR 1918 (12 months)	
	Prosecutions completed	Fines imposed	Prosecutions completed	Fines imposed
Factories	2,835	$25,250	1,301	$13,755
Mercantile establishments	1,617	12,385	934	7,950
Total	4,452	$37,635	2,235	$21,705

	FISCAL YEAR 1919 (12 months)		FISCAL YEAR 1920 (12 months)	
	Prosecutions completed	Fines imposed	Prosecutions completed	Fines imposed
Factories	1,656	$12,890	1,661	$12,720
Mercantile establishments	1,155	7,085	1,072	9,550
Total	2,811	$19,975	2,733	$22,270

FISCAL YEAR 1921
(12 months)

	Prosecutions completed	Fines imposed
Factories	1,074	$7,985
Mercantile establishments	371	3,135
Total	1,445	$11,120

SPECIAL CALENDAR

During the past fiscal year there has been inaugurated a method whereby those who failed to comply with an order within a reasonable time, or those who violated the laws relative to child labor, illegal hours or day-of-rest, were summoned to appear before the Counsel of the Department and the Director of the Bureau of Inspection to show cause why they should not be prosecuted.

This plan was adopted to relieve the courts of certain cases, which, although violations of law, in many instances related to a class of orders with which compliance could be readily secured without the expenditure of much money. In the development of this plan, it was found advisable to extend its scope to other classes of orders which had not been complied with within a reasonable time, also to first violations of the child labor, illegal hours and day-of-rest laws.

We find that this method of operation stimulates compliance and reduces the amount of time spent by the inspectors in court. On the appearance of a person having failed to comply with the orders, he is asked to explain his failure to comply. In many instances the orders have been complied with between the receipt of the summons and the date of appearance. Where they have not been complied with, the firm is given one or two weeks in which to comply, according to the nature of the orders. If there is any misunderstanding as to how a compliance can be made, a full explanation is given. If, on the visit of the inspector to the premises on the date fixed at the hearing, the order is not complied with, the case is presented to the court. In instances where the offense is a first violation of child labor, illegal hours, or day-of-rest laws, the application of the law is fully explained and the violator advised that his establishment will be under close surveillance, and should a second violation be found, a prosecution will follow. The method of keeping our records will clearly indicate a second violation.

This plan has promoted compliance with orders issued and given evidence of very satisfactory results in relieving the Bureau of work in prosecuting for a class of orders that can be easily complied with at a very moderate cost.

NON-INSURANCE

During the past fiscal year when the inspectors of the Bureau found employers who had failed to provide compensation insurance for the protection of their employees, a summons was issued directing them to appear at the office of the Department to show that insurance was being carried, or be prosecuted for failure to do so.

The beneficial result of this policy is clearly demonstrated and has been the means of providing compensation insurance for many thousands of workers. This method has also been the means of providing protection for the employees of proprietors who either wilfully or carelessly fail to provide such protection until compelled to do so by the Department of Labor.

JAMES L. GERNON,
Director, Bureau of Inspection.

STATISTICS OF INSPECTION

(Compiled by the Office of the Chief Statistician)

Factory Inspection

1. Work of factory inspectors.
2. Work of factory inspectors in year ended June 30, 1921, by supervising districts.
3. Compliances with orders reported by the Division of Factory Inspection in year ended June 30, 1921.
4. Orders issued by the Division of Factory Inspection in year ended June 30, 1921.
5. Orders issued by the Division of Industrial Hygiene and reported compliances therewith in year ended June 30, 1921.

6-A. Prosecutions for violations of the Labor Law in factories.
6-B. Prosecutions for violations of the Labor Law in factories (concluded).

7. Violations of the Labor Law in factories, referred to counsel without issuance of orders in year ended June 30, 1921.
8. Children found illegally employed in factories in year ended June 30, 1921.
9. Children for whom proof of age was demanded in factories in year ended June 30, 1921.
10. Children found at prohibited employment in factories in year ended June 30, 1921.
11. Children 14 to 16 years of age found employed in factories in year ended June 30, 1921.
12. Complaints, alleging violations of the Labor Law in factories, investigated in year ended June 30, 1921.
13. Illegal hours and prohibited employment of women and minors in factories in year ended June 30, 1921.
14. Violations of day-of-rest law in factories in year ended June 30, 1921.

Homework Inspection

15. Work of homework inspectors.
16. Licensing of tenements in year ended June 30, 1921.
17. Registers of outside workers.
18. Permits to factory owners to send work to tenements in year ended June 30, 1921.
19. Orders issued by the Division of Homework Inspection and reported compliances therewith in year ended June 30, 1921.
20. Children found illegally employed in licensed tenement living rooms in year ended June 30 1921.
21. Prosecutions for violations of the Labor Law in tenement houses.
22. Violations of the Labor Law in tenements referred to counsel without issuance of orders in year ended June 30, 1921.

Mercantile Inspection

23. Work of mercantile inspectors, 1914 to 1921.
24. Work of mercantile inspectors, by localities.
25. Orders issued by the Division of Mercantile Inspection in year ended June 30, 1921.
26. Compliances with orders reported by the Division of Mercantile Inspection in year ended June 30, 1921.
27. Prosecutions for violations of the Labor Law in mercantile establishments.
28. Violations of the Labor Law in mercantile establishments referred to counsel without issuance of orders in year ended June 30, 1921.
29. Children found illegally employed in mercantile establishments in year ended June 30, 1921.
30. Children for whom proof of age was demanded in mercantile establishments in year ended June 30, 1921.
31. Children 14 to 16 years of age found employed in mercantile establishments.
32. Illegal hours of women and male minors and prohibited employment of female minors in mercantile establishments in year ended June 30, 1921.
33. Violations of day-of-rest law in mercantile establishments in year ended June 30, 1921.
34. Complaints, alleging violation of the Labor Law in mercantile establishments, investigated.

Industrial Diseases

35. Cases of industrial disease reported to Department of Labor under section 206 of the Labor Law in ten years.

Employment Certificates

36. Child labor certificates reported issued in year ended June 30, 1921, exclusive of vacation certificates.
37. Child labor certificates reported issued in July and August, 1920, for summer vacation employment.

Table 1 — WORK OF FACTORY INSPECTORS

KIND OF WORK	YEAR ENDED JUNE 30, 1921			Twelve months ended June 30, 1920
	First Inspection District	Second Inspection District	Total State	
Number of regular inspections of:				
Factories occupying whole buildings	8,123	14,204	22,327	21,588
Tenant factories	43,472	5,409	48,881	47,302
Bakeries	54	1,511	1,565	1,436
Total	51,649	21,124	72,773	70,326
Number of special inspections (with or without orders)	12,576	5,789	18,365	16,564
Number of complaint investigations	619	197	816	1,206
Number of building surveys	45,642	20,266	65,908	52,059
Number of special investigations	5,508	1,796	7,304	5,509
Number of employees at time of inspection	756,692	594,061	1,350,753	1,507,876
Number of compliance visits:				
First visits	35,433	12,477	47,910	47,630
Subsequent visits	38,491	19,496	57,987	60,648
Total	73,924	31,973	105,897	108,278
Number of tagging cases (exclusive of "assisting"):				
Unclean factories (Sec. 297)	40	2	42	64
Unclean bakeries (Sec. 336)	....	1	1	1
Dangerous machinery (Sec. 256)	114	59	173	304
Scaffolds (Sec. 240)	....	4	4	....
Total	154	66	220	369
Number of department office calls	5,423	984	6,407	8,157
Number of factory information calls	19,745	2,287	22,032	17,575
Number of factories closed or vacated	2,305	2,303	4,608	4,303

Table 2 — WORK OF FACTORY INSPECTORS IN YEAR ENDED JUNE 30, 1921, BY SUPERVISING DISTRICTS

KIND OF WORK	FIRST INSPECTION DISTRICT First Supervising District	Second Supervising District	Third Supervising District	Fourth Supervising District	Fifth Supervising District	Supervisors	Total
Number of regular inspections	10,999	9,682	9,700	10,356	10,912	....	51,649
Thereof: Factories occupying whole buildings	3,292	1,032	355	680	2,764	....	8,123
Tenant factories	7,707	8,650	9,345	9,676	8,094	....	43,472
Bakeries	....	....	....	....	54	....	54
Number of building surveys	15,442	7,687	4,505	6,662	11,345	1	45,642
Thereof: Surveys of whole buildings and tenant factory buildings	10,518	5,484	3,810	5,071	7,968	1	32,852
Surveys of miscellaneous buildings	1,244	30	9	230	1,172	....	2,685
Surveys of buildings in which there was no manufacturing	3,680	2,173	686	1,361	2,205	....	10,105
Number of special inspections (with or without orders)	3,313	1,811	3,322	985	3,133	12	12,576
Total number of employees in factories inspected	189,058	134,479	136,948	162,390	133,817	....	756,692
Number of tagging cases	10	60	35	25	24	....	154
Thereof: Unclean factories (Sec. 297)	....	6	22	12	....	....	40
Unclean bakeries (Sec. 336)	....	....	....	....	....	....	....
Dangerous machinery (Sec. 256)	10	54	13	13	24	....	114
Prohibition of use of scaffolds (Sec. 240)	....	....	....	....	....	....	....
Number of complaint investigations†	93	103	166	140	114	3	619
Number of compliance visits	17,708	18,371	15,236	11,461	10,714	434	73,924
Thereof: First visits	8,453	8,503	6,842	6,287	5,206	142	35,433
Subsequent visits	9,255	9,868	8,394	5,174	5,508	292	38,491
Number of special investigations	907	1,834	497	1,341	536	393	5,508
Number of department office calls	755	960	978	1,151	700	879	5,423
Number of factory information calls	5,927	4,858	4,435	1,179	2,584	762	19,745
Number of factories found closed or vacated	552	764	436	330	223	....	2,305

† See table 14, which shows the number of communications alleging violation of the Labor Law in factories, and the number and classification of items contained in the complaints.

Table 2 — WORK OF FACTORY INSPECTORS IN YEAR ENDED JUNE 30, 1921, BY SUPERVISING DISTRICTS — (*Concluded*)

	SECOND INSPECTION DISTRICT						
KIND OF WORK	Sixth Supervising District	Seventh Supervising District	Eighth Supervising District	Ninth Supervising District	Supervisors	Total	Total State
Number of regular inspections	5,841	5,348	4,408	5,527	....	21,124	72,773
Thereof: *Factories occupying whole buildings*	*3,767*	*3,980*	*2,645*	*3,812*	....	*14,204*	*22,327*
Tenant factories	*1,427*	*977*	*1,556*	*1,449*	....	*5,409*	*48,881*
Bakeries	*647*	*391*	*207*	*266*	....	*1,511*	*1,565*
Number of building surveys	5,409	5,231	3,905	5,721	....	20,266	65,908
Thereof: *Surveys of whole buildings and tenant factory buildings*	*5,378*	*4,568*	*3,898*	*4,613*	....	*18,457*	*51,309*
Surveys of miscellaneous buildings	*13*	*514*	*7*	*387*	....	*921*	*3,606*
Surveys of buildings in which there was no manufacturing	*18*	*149*	....	*721*	....	*888*	*10,993*
Number of special inspections (with or without orders)	2,178	508	2,065	1,018	20	5,789	18,365
Total number of employees in factories inspected	194,288	134,260	118,475	147,038	....	594,061	1,350,753
Number of tagging cases	14	14	6	32	....	66	220
Thereof: *Unclean factories* (*Sec. 297*)	*2*	....	....	....	....	*2*	*42*
Unclean bakeries (*Sec. 336*)	*1*	....	....	....	....	*1*	*1*
Dangerous machinery (*Sec. 256*)	*11*	*11*	*6*	*31*	....	*59*	*173*
Prohibition of use of scaffolds (*Sec. 240*)	....	*3*	....	*1*	....	*4*	*4*
Number of complaint investigations†	73	41	26	55	2	197	816
Number of compliance visits	10,188	6,560	6,333	8,386	506	31,973	105,897
Thereof: *First visits*	*3,874*	*2,705*	*2,727*	*3,171*	....	*12,477*	*47,910*
Subsequent visits	*6,314*	*3,855*	*3,606*	*5,215*	*506*	*19,496*	*57,987*
Number of special investigations	198	418	419	488	273	1,796	7,304
Number of department office calls	152	134	135	563	....	984	6,407
Number of factory information calls	185	158	1,433	429	82	2,287	22,032
Number of factories found closed or vacated	465	657	742	439	....	2,303	4,608

† See table 14, which shows the number of communications alleging violation of the Labor Law in factories, and the number and classification of items contained in the complaints.

Table 3 — COMPLIANCES WITH ORDERS REPORTED BY THE DIVISION OF FACTORY INSPECTION IN YEAR ENDED JUNE 30, 1921

SUBJECT	NUMBER OF COMPLIANCES REPORTED — IN FIRST INSPECTION DISTRICT ON ORDERS ISSUED — Prior to July 1, 1920	Between July 1, 1920 and June 30, 1921	Total	IN SECOND INSPECTION DISTRICT ON ORDERS ISSUED — Prior to July 1, 1920	Between July 1, 1920 and June 30, 1921	Total	IN TOTAL STATE ON ORDERS ISSUED — Prior to July 1, 1920	Between July 1, 1920 and June 30, 1921	Total
I. Administration	17	46,527	46,544	29	6,414	6,443	46	52,941	52,987
1. Posting of laws, permits, notices, etc.	1	46,482	46,483	9	6,404	6,413	10	52,886	52,896
2. Keeping of records, registers, etc.	16	45	61	20	10	30	36	55	91
II. Sanitation	7,445	50,016	57,461	4,873	10,350	15,223	12,318	60,366	72,684
1. Toilet facilities:									
a. Water closets	3,681	25,261	28,942	2,515	5,339	7,854	6,196	30,600	36,796
b. Washrooms and sinks (including personal cleanliness)	805	2,636	3,441	879	1,046	1,925	1,684	3,682	5,366
c. Dressing rooms	731	6,438	7,169	226	321	547	957	6,759	7,716
2. Cleanliness or repair of workrooms, halls, etc.	484	5,742	6,226	408	1,651	2,059	892	7,393	8,285
3. Ventilation, heat and humidity:									
a. General	13	12	25	19	25	44	32	37	69
b. Removal of dust, fumes, etc.	654	888	1,542	415	481	896	1,069	1,369	2,438
4. Lighting (eyesight protection)	936	8,805	9,741	343	497	840	1,279	9,302	10,581
5. Meals	5	34	39	4	887	891	9	921	930
6. Drinking water and drinking cups	4	23	27	36	75	111	40	98	138
7. Sanitation of living quarters	....	....	....	1	6	7	1	6	7
8. Mattresses, etc.	132	177	309	27	22	49	159	199	358
III. Accident Prevention	3,920	27,137	31,057	7,388	24,480	31,868	11,308	51,617	62,925
1. Elevators and hoistways	1	19	20	1,510	4,701	6,211	1,511	4,720	6,231
2. Machinery and apparatus	3,318	21,245	24,563	5,035	16,694	21,729	8,353	37,939	46,292
3. Electric switchboards, wires, etc.	40	196	236	83	478	561	123	674	797
4. Stairs, platforms, pits, floors, etc. (including repairs)	205	2,137	2,342	581	2,118	2,699	786	4,255	5,041
5. Lighting to prevent accidents	186	748	934	74	185	259	260	933	1,193
6. Window cleaning	4	24	28	2	....	2	6	24	30
7. First aid appliances	166	2,768	2,934	103	304	407	269	3,072	3,341

IV. Fire Protection	63	916	979	2,064	3,517	5,581	2,127	4,433	6,560
1. Structural conditions:									
a. Number of exits	8	3	11	656	178	834	664	181	845
b. Doors, doorways and windows	6	1	7	413	511	924	419	512	931
c. Stairways				129	44	173	129	44	173
d. Fire escapes				29	38	67	29	38	67
e. Partitions				4	3	7	4	3	7
f. Openings				19	11	30	19	11	30
g. Other or general				5	1	6	5	1	6
2. Clear means of egress	48	911	959	274	840	1,114	322	1,751	2,073
3. Fire alarms				149	105	254	149	105	254
4. Fire drills and records	1		1	196	228	424	197	228	425
5. Waste and other inflammable materials				101	672	773	101	672	773
6. Gas jets				1	2	3	1	2	3
7. Smoking				61	831	892	61	831	892
8. Sprinklers				1		1	1		1
9. Number of occupants		1	1	11	9	20	11	10	21
10. Fire escapes other than structural conditions				14	31	45	14	31	45
11. Fire extinguishers				1	13	14	1	13	14
V. Children (Prohibited Occupations)	1		1				1		1
VI. Women and Minors	9	53	62	19	29	48	28	82	110
1. Hours				4		4	4		4
2. Prohibited occupations					3	3		3	3
3. Employment after childbirth									
4. Seats for women	9	53	62	15	26	41	24	79	103
VII. Day of Rest	157	1,262	1,419	120	110	230	277	1,372	1,649
VIII. Payment of Wages		31	31	12	46	58	12	77	89
Total	11,612	125,942	*137,554	14,505	44,946	†59,451	26,117	170,888	197,005

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* The total compliances, reported for the First Inspection District, include the waival of 1,665 orders issued prior to July 1, 1920, and 5,019 orders issued between July 1, 1920 and June 30, 1921. These waivals resulted from the cessation of the illegal conditions by reason of modifications of the law, Industrial Code, or accompanying circumstances such as to make the original orders no longer necessary.

† The total compliances, reported for the Second Inspection District, include the waival of 1,824 orders issued prior to July 1, 1920, and 1,501 orders issued between July 1, 1920, and June 30, 1921.

Note.— See Table 5 for factory compliances reported by the Division of Industrial Hygiene.

Table 4 — ORDERS ISSUED BY THE DIVISION OF FACTORY INSPECTION IN YEAR ENDED JUNE 30, 1921

SUBJECT OF ORDERS	NUMBER OF ORDERS ISSUED IN —		
	First Inspection District	Second Inspection District	Total State
I. Administration	**46,534**	**6,425**	**52,959**
1. Posting of laws, permits, notices, etc	46,487	6,410	52,897
2. Keeping of records, registers, etc	47	15	62
II. Sanitation	**55,413**	**12,944**	**68,357**
1. Toilet facilities:			
a. Water closets	28,064	6,558	34,622
b. Washrooms and sinks (including personal cleanliness)	3,057	1,609	4,666
c. Dressing rooms	6,892	404	7,296
2. Cleanliness or repair of workrooms, halls, etc	6,271	1,933	8,204
3. Ventilation, heat and humidity:			
a. General	16	42	58
b. Removal of dust, fumes, etc	1,425	801	2,226
4. Lighting (eyesight protection)	9,397	572	9,969
5. Meals	40	889	929
6. Drinking water and drinking cups	25	89	114
7. Sanitation of living quarters	......	15	15
8. Mattresses, etc	226	32	258
III. Accident Prevention	**30,432**	**31,516**	**61,948**
1. Elevators and hoistways	21	6,737	6,758
2. Machinery and apparatus	24,196	20,966	45,162
3. Electric switchboards, wires, etc	215	529	744
4. Stairs, platforms, pits, floors, etc. (including repairs)	2,269	2,653	4,922
5. Lighting to prevent accidents	770	239	1,009
6 Window cleaning	38	2	40
7. First aid appliances	2,923	390	3,313
IV. Fire Protection	**1,031**	**4,403**	**5,434**
1. Structural conditions:			
a. Number of exits	5	388	393
b. Doors, doorways and windows	1	692	693
c. Stairways	1	89	90
d. Fire escapes	......	43	43
e. Partitions	......	5	5
f. Openings	......	28	28
g. Other or general	......	3	3
2. Clear means of egress	1,022	1,041	2,063
3. Fire alarms	......	143	143
4. Fire drills and records	......	296	296
5. Waste and other inflammable materials	......	746	746
6. Gas jets	......	2	2
7. Smoking	......	862	862
8. Sprinklers	......	......	......
9. Number of occupants	2	11	13
10. Fire escapes other than structural conditions	......	41	41
11. Fire extinguishers	......	13	13
V. Children (Prohibited Occupations)	......	......	......
VI. Women and Minors	**61**	**42**	**103**
1. Hours	......	......	......
2. Prohibited occupations	......	3	3
3. Emplo ment after childbirth	......	......	......
4. Seats for women	61	39	100
VII. Day of Rest	**1,432**	**152**	**1,584**
VIII. Payment of Wages	**41**	**78**	**119**
Total	**134,944**	**55,560**	**190,504**

Note.— See Table 5 for factory orders issued by the Division of Industrial Hygiene.

Table 5 — ORDERS ISSUED BY THE DIVISION OF INDUSTRIAL HYGIENE AND REPORTED COMPLIANCES THEREWITH IN YEAR ENDED JUNE 30, 1921

SUBJECT	NUMBER OF ORDERS ISSUED IN —			NUMBER OF COMPLIANCES REPORTED IN —		
	First Inspection District	Second Inspection District	Total State	First Inspection District	Second Inspection District	Total State
I. Administration				1	2	3
1. Posting of laws, permits, notices, etc				1	2	3
II. Sanitation		2	2	16	10	26
1. Toilet facilities:						
b. Washrooms and sinks (including personal cleanliness)					1	1
2. Cleanliness or repair of workrooms, halls, etc				3		3
3. Ventilation, heat and humidity:						
b. Removal of dust, fumes, etc		2	2	13	7	20
5. Meals					2	2
Total		2	2	17	12	29

Table 6-A — PROSECUTIONS FOR VIOLATIONS

Subject of Law Involved	First Inspection District					
		Results to June 30, 1921				
				Convicted		
	Number of cases	Pending	Dismissed, acquitted or withdrawn*	Sentence suspended	Fined	Fines
				A. Proceedings Instituted		
II. Sanitation						
1. Toilet facilities:						
a. Water closets	21	....	15	2	4	$110
b. Washrooms and sinks (including personal cleanliness)	8	....	5	3	....	....
c. Dressing rooms	15	....	(1) 9	2	3	60
2. Cleanliness or repair of workrooms, halls, etc.	6	....	4	2	....	....
3. Ventilation, heat and humidity:						
b. Removal of dust, fumes, etc	21	1	(1) 7	4	8	370
4. Lighting (eyesight protection)	8	....	(2) 4	......	2	45
8. Mattresses, etc	1	....	....	......	1	25
III. Accident Prevention						
1. Elevators and hoistways	....	....	....	......	....	....
2. Machinery and apparatus	....	....	....	......	....	....
4. Stairs, platforms, pits, floors, etc. (including repairs)	3	....	1	......	2	150
IV. Fire Protection						
1. Structural conditions:						
a. Number of exits	1	....	....	......	1	50
b. Doors, doorways and windows	....	....	....	......	....	....
c. Stairways	....	....	....	......	....	....
g. Other or general	....	....	....	......	....	....
2. Clear means of egress:						
a. Locked doors	2	....	....	1	1	30
7. Smoking	....	....	....	......	....	....
9. Number of occupants	....	....	....	......	....	....
V. Children						
1. Under 14 years	1	....	....	......	1	20
2. From 14 to 16 years:						
a. Certificates	2	....	....	1	1	35
VI. Women and Minors						
1. Hours	2	....	....	1	1	30
VII. Day of Rest						
Day of rest	3	....	1	2	....	....
Total	94	1	(4) 46	18	25	$905

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* Withdrawn cases are given separately in parentheses.
† Including one case in which Grand Jury failed to indict.

OF THE LABOR LAW IN FACTORIES

SECOND INSPECTION DISTRICT						TOTAL STATE						Subject number
Number of cases	RESULTS TO JUNE 30, 1921					Number of cases	RESULTS TO JUNE 30, 1921					
	Pending	Dismissed, acquitted or withdrawn*	Convicted		Fines		Pending	Dismissed, acquitted or withdrawn*	Convicted		Fines	
			Sentence suspended	Fined					Sentence suspended	Fined		
Prior to July 1, 1920												
8	....	(2) †4	1	1	$20	29	....	(2) 19	3	5	$130	II 1a
6	....	5	1	...	.....	14	....	10	4	...	.....	b
....	......	....	....	.....	.....	15	....	(1) 9	2	3	60	c
....	....	......	.....	...	.....	6	....	4	2	...	.....	2
4	....	2	2	...	.....	25	1	(1) 9	6	8	370	3 b
....	....	......	.....	...	.....	8	....	(2) 4	.....	2	45	4
....	....	......	.....	...	.....	1	....	......	.....	1	25	8
2	....	2	.....	...	.....	2	....	2	.....	...	.....	III 1
1	....	1	.....	...	.....	1	....	1	.....	...	.....	2
....	....	......	.....	...	.....	3	....	1	.....	2	150	4
5	....	4	1	...	.....	6	....	4	1	1	50	IV 1 a
1	....	†1	.....	...	.....	1	....	1	.....	...	.....	b
1	....	......	1	...	.....	1	....	......	1	...	.....	c
1	....	1	.....	...	.....	1	....	1	.....	...	.....	g
2	....	(1) †1	.....	...	.....	4	....	(1) 1	1	1	20	2 a
1	....	1	.....	...	.....	1	....	1	.....	...	.....	7
1	....	......	1	...	.....	1	....	......	1	...	.....	9
....	....	......	.....	...	.....	1	....	......	.....	1	20	V 1
....	....	......	.....	...	.....	2	....	......	1	1	25	2 a
....	....	......	.....	...	.....	2	....	......	1	1	20	VI 1
3	....	1	1	1	15	6	....	2	3	1	15	VIII
36	....	(3) 23	8	2	$35	130	1	(7) 69	26	27	$930	

Table 6-B — PROSECUTIONS FOR VIOLATIONS

SUBJECT OF LAW INVOLVED	FIRST INSPECTION DISTRICT					
		RESULTS TO JUNE 30, 1921				
				Convicted		
	Number of cases	Pending	Dismissed, acquitted or withdrawn*	Sentence suspended	Fined	Fines
				B. Proceedings Instituted		
I. ADMINISTRATION						
4. Interfering with inspector	4	....	(2)	......	2	$75
II. SANITATION						
1. Toilet facilities:						
a. Water closets	79	1	(7) 44	12	15	390
b. Washrooms and sinks (including personal cleanliness)	18	....	(3) 12	2	1	50
c. Dressing rooms	34	....	(8) 17	7	2	45
2. Cleanliness or repair of workrooms, halls, etc.	13	....	(1) 8	2	2	40
3. Ventilation, heat and humidity:						
b. Removal of dust, fumes, etc	83	11	(1) 38	14	19	820
4. Lighting (eyesight protection)	10	....	(1) 5	2	2	45
8. Mattresses, etc	3	....	1	......	2	75
III. ACCIDENT PREVENTION						
1. Elevators and hoistways	....	....	....	......	....	......
2. Machinery and apparatus	7	....	5	......	2	70
4. Stairs, platforms, pits, floors, etc. (including repairs)	3	....	2	......	1	25
5. Lighting to prevent accidents	2	....	2	......	....	......
7. First aid appliances	1	....	....	......	1	30
IV. FIRE PROTECTION						
1. Structural conditions:						
a. Number of exits	....	....	....	......	....	......
b. Doors, doorways and windows	....	....	....	......	....	......
c. Stairways	....	....	....	......	....	......
f. Openings	....	....	....	......	....	......
2. Clear means of egress:						
a. Locked doors	92	2	(1) 3	15	71	1,960
b. Other	3	....	(1)	1	1	20
5. Waste and other inflammable materials	....	....	....	......	....	......
7. Smoking	....	....	....	......	....	......
V. CHILDREN						
1. Under 14 years	59	1	(1) 5	14	38	840
2. From 14 to 16 years:						
a. Certificates	123	....	(1) 6	61	55	1,150
b. Hours	6	....	....	2	4	80
c. Prohibited occupations	4	....	(1)	2	1	30
VI. WOMEN AND MINORS						
1. Hours	12	....	....	6	6	150
2. Prohibited occupations	....	....	....	......	....	......
VII. DAY OF REST						
Day of rest	9	....	2	......	7	145
VIII. PAYMENT OF WAGES						
Payment of wages	....	....	....	......	....	......
Total	565	15	(28) 150	140	232	$6,020
Grand total	659	16	(32) 196	158	257	$6,915

* Withdrawn cases are given separately in parentheses.
† Including one case in which Grand Jury failed to indict.

OF THE LABOR LAW IN FACTORIES — (*Concluded*)

SECOND INSPECTION DISTRICT						TOTAL STATE						Subject number
Number of cases	RESULTS TO JUNE 30, 1921					Number of cases	RESULTS TO JUNE 30, 1921					
	Pending	Dismissed, acquitted or withdrawn*	Convicted		Fines		Pending	Dismissed, acquitted or withdrawn*	Convicted		Fines	
			Sentence suspended	Fined					Sentence suspended	Fined		
in Current Year (July 1, 1920–June 30, 1921)												
												I
1	....	......	1	...	.....	5	....	(2)	1	2	$75	4
												II
												1
58	4	(3) †45	3	3	$95	137	5	(10) 89	15	18	485	a
25	6	(1) 18	.....	...	.....	43	6	(4) 30	2	1	50	b
8	2	3	.....	3	60	42	2	(8) 20	7	5	105	c
5	....	4	.....	1	20	18	....	(1) 12	2	3	60	2
												3
20	4	(1) 13	.....	2	30	103	15	(2) 51	14	21	850	b
2	....	2	.....	...	.....	12	....	(1) 7	2	2	45	4
.....	....	......	.....	...	.....	3	....	1	.....	2	75	8
												III
12	2	(1) 8	1	...	.....	12	2	(1) 8	1	...	.....	1
9	1	†8	.....	...	.....	16	1	13	.....	2	70	2
3	....	3	.....	...	.....	6	....	5	.....	1	25	4
4	....	3	.....	1	20	6	....	5	.....	1	20	5
4	....	2	1	1	20	5	....	2	1	2	40	7
												IV
												1
21	5	(1) 11	3	1	20	21	5	(1) 11	3	1	20	a
3	....	2	1	...	.....	3	....	2	1	...	.....	b
1	....	1	.....	...	.....	1	....	1	.....	...	.....	c
1	....	1	.....	...	.....	1	....	1	.....	...	.....	f
												2
24	1	(1) 4	13	5	105	116	3	(2) 7	28	76	2,065	a
2	....	2	.....	...	.....	5	....	(1) 2	1	1	20	b
2	....	2	.....	...	.....	2	....	2	.....	...	.....	5
79	....	(5) 1	66	7	120	79	....	(5) 1	66	7	120	7
												V
19	....	†3	10	6	150	78	1	(1) 8	24	44	990	1
												2
41	....	(2) 3	31	5	130	164	....	(3) 9	92	60	1,280	a
4	....	†1	2	1	20	10	....	1	4	5	100	b
3	....	(1) ..	2	...	.....	7	....	(2) ..	4	1	20	c
												VI
12	....	1	6	5	110	24	....	1	12	11	260	1
1	....	1	.....	...	.....	1	....	1	.....	...	.....	2
11	1	(2) †3	2	3	60	20	1	(2) 5	2	10	205	VII
4	1	†1	.....	2	75	4	1	1	.....	2	75	VIII
379	27	(18) 146	142	46	$1,035	944	42	(46) 296	282	278	$7,055	
415	27	(21) 169	150	48	$1,070	1,074	43	(53) 365	308	305	$7,985	

Table 7 — VIOLATIONS OF THE LABOR LAW IN FACTORIES, REFERRED TO COUNSEL WITHOUT ISSUANCE OF ORDERS IN YEAR ENDED JUNE 30, 1921

SUBJECT OF VIOLATION	NUMBER OF VIOLATIONS		
	Referred	Prosecuted	Not prosecuted by order of Commission
(a) *First Inspection District*			
I. ADMINISTRATION:			
4. Interfering with inspector	4	4	....
IV. FIRE PROTECTION:			
2. Clear means of egress:			
a. Locked doors	99	92	7
V. CHILDREN:			
1. Under 14 years	60	59	1
2. From 14 to 16 years:			
a. Certificates	128	123	5
b. Hours	7	6	1
c. Prohibited occupations	4	4	....
VI. WOMEN AND MINORS:			
1. Hours	13	12	1
VII. DAY OF REST:			
Day of rest	12	9	3
Total	327	309	18
(b) *Second Inspection District*			
I. ADMINISTRATION:			
4. Interfering with inspector	1	1	....
IV. FIRE PROTECTION:			
2. Clear means of egress:			
a. Locked doors	25	24	1
7. Smoking	80	79	1
V. CHILDREN:			
1. Under 14 years	20	19	1
2. From 14 to 16 years:			
a. Certificates	48	41	7
b. Hours	4	4	....
c. Prohibited occupations	3	3	....
VI. WOMEN AND MINORS:			
1. Hours	15	12	3
2. Prohibited occupations	1	1	....
VII. DAY OF REST:			
Day of rest	12	11	1
Total	209	195	14
(c) *Total State*			
I. ADMINISTRATION:			
4. Interfering with inspector	5	5	....
IV. FIRE PROTECTION:			
2. Clear means of egress:			
a. Locked doors	124	116	8
7. Smoking	80	79	1
V. CHILDREN:			
1. Under 14 years	80	78	2
2. From 14 to 16 years:			
a. Certificates	176	164	12
b. Hours	11	10	1
c. Prohibited occupations	7	7	....
VI. WOMEN AND MINORS:			
1. Hours	28	24	4
2. Prohibited occupations	1	1	....
VII. DAY OF REST:			
Day of rest	24	20	4
Total	536	504	32

Table 8 — CHILDREN FOUND ILLEGALLY EMPLOYED IN FACTORIES IN YEAR ENDED JUNE 30, 1921

LOCALITY	Number of establishments employing children	NUMBER OF CHILDREN								Total children
		UNDER 14 YEARS OF AGE		14–16, WORKING —						
				WITHOUT CERTIFICATES		WITHOUT CERTIFICATES AND ILLEGAL HOURS		ILLEGAL HOURS		
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
New York City	707	112	33	368	277	2	4	20	61	877
Bronx	*17*	*10*	*2*	*6*	*5*	....	....	....	....	*23*
Brooklyn	*154*	*40*	*18*	*75*	*56*	....	*1*	*3*	*1*	*194*
Manhattan	*506*	*57*	*10*	*274*	*204*	*2*	*3*	*15*	*59*	*624*
Queens	*24*	*2*	*2*	*10*	*9*	....	....	*2*	*1*	*26*
Richmond	*6*	*3*	*1*	*3*	*3*	....	....	....	....	*10*
Long Island, outside of New York City	1	....	....	....	2	....	....	....	....	2
Total — First District	708	112	33	368	279	2	4	20	61	879
Albany	6	1	....	1	2	1	2	....	....	7
Binghamton	2	1	....	....	2	....	....	....	....	3
Buffalo	50	7	1	15	9	18	5	10	1	66
Rochester	32	1	1	13	7	16	5	5	....	48
Schenectady	....	....	....	....	....	....	....	....	....	....
Syracuse	7	3	....	13	2	4	....	....	....	22
Troy	6	1	1	1	2	4	....	....	....	9
Utica	....	....	....	....	....	....	....	....	....	....
Yonkers	14	2	9	2	18	....	....	....	....	31
Remainder of State	189	28	13	79	52	41	25	10	14	262
Total — Second District	306	44	25	124	94	84	37	25	15	448
Total — State	1,014	156	58	492	373	86	41	45	76	1,327

Table 9 — CHILDREN FOR WHOM PROOF OF AGE WAS DEMANDED IN FACTORIES IN YEAR ENDED JUNE 30, 1921

	Age proven 16	Age proven 14–16 (certificate secured)	Age proven less than 14 (discharged)	Discharged without proof of age
First Inspection District:				
Boys	12	1	....	13
Girls	20	3	....	16
Total	32	4	....	29
Second Inspection District:				
Boys	12	1	1	18
Girls	16	....	....	14
Total	28	1	1	32
Total State:				
Boys	24	2	1	31
Girls	36	3	....	30
Total	60	5	1	61

Table 10 — CHILDREN FOUND AT PROHIBITED EMPLOYMENT IN FACTORIES IN YEAR ENDED JUNE 30, 1921

LOCALITY	OCCUPATION	Number of establishments	NUMBER OF CHILDREN (14 TO 16 YEARS OF AGE)	
			Boys	Girls
New York, Brooklyn	On dangerous machinery	2	2	....
New York, Manhattan	On dangerous machinery	4	4	....
Total — First Inspection District		6	6	....
Auburn	Operating elevator	1	1	....
Beacon	Operating elevator	1	1	....
Buffalo	On dangerous machinery	8	10	2
Glens Falls	Operating elevator	1	1	....
Herkimer	On dangerous machinery	1	1	....
	Operating elevator	1	1	....
Ilion	On dangerous machinery	1	1	....
Irvington	On dangerous machinery	1	1	....
Rochester	Work requiring standing	1	....	3
	On dangerous machinery	1	1	....
Troy	On dangerous machinery	1	1	....
Weedsport	On dangerous machinery	1	1	....
Total — Second Inspection District		19	20	5
Total State		25	26	5

Table 11 — CHILDREN 14 TO 16 YEARS OF AGE FOUND EMPLOYED IN FACTORIES IN YEAR ENDED JUNE 30, 1921*

CITY	Number of establishments	NUMBER OF CHILDREN Boys	Girls	Total
Albany	26	23	35	58
Amsterdam	12	37	39	76
Auburn	19	27	23	50
Batavia	6	3	7	10
Beacon	10	11	10	21
Binghamton	13	21	34	55
Buffalo	229	370	277	647
Canandaigua	1	....	1	1
Cohoes	13	15	14	29
Corning	3	4	....	4
Cortland	3	6	....	6
Dunkirk	8	11	33	44
Elmira	4	2	11	13
Fulton	3	5	7	12
Geneva	5	5	4	9
Glen Cove	2	1	3	4
Glens Falls	6	4	3	7
Gloversville	23	33	18	51
Hornell	4	1	8	9
Hudson	6	7	5	12
Ithaca	1	1	....	1
Jamestown	15	22	12	34
Johnstown	34	34	22	56
Kingston	15	26	46	72
Lackawanna	1	1	....	1
Little Falls	2	5	4	9
Lockport	8	5	10	15
Mechanicville	4	1	5	6
Middletown	6	2	10	12
Mount Vernon	14	29	17	46
Newburgh	5	6	5	11
New Rochelle	4	5	5	10
New York	2,165	2,801	3,024	5,825
Bronx	*58*	*65*	*93*	*158*
Brooklyn	*531*	*779*	*1,186*	*1,965*
Manhattan	*1,347*	*1,648*	*1,395*	*3,043*
Queens	*186*	*227*	*309*	*536*
Richmond	*43*	*82*	*41*	*123*
Niagara Falls	17	33	37	70
North Tonawanda	9	19	18	37
Norwich	4	34	2	36
Ogdensburg	4	1	4	5
Olean	4	2	11	13
Oneida	2	3	....	3
Oneonta	4	2	2	4
Oswego	5	15	25	40
Plattsburg	1	1	....	1
Port Jervis	2	1	4	5
Poughkeepsie	12	19	13	32
Rensselaer	....	....	....	....
Rochester	169	322	307	629
Rome	3	11	....	11
Salamanca	....	....	....	....
Saratoga Springs	3	2	3	5
Schenectady	6	59	36	95
Sherrill	1	2	....	2
Syracuse	49	86	51	137
Tonawanda	7	14	6	20
Troy	26	34	33	67
Utica	45	115	152	267
Watertown	3	4	2	6
Watervliet	11	16	10	26
White Plains	1	1	3	4
Yonkers	20	10	30	40
Remainder of State	335	481	488	969
Total	3,413	4,811	4,929	9,740

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* See Table 8 for number of children. under 14 years of age, found illegally employed.

Table 12 — COMPLAINTS, ALLEGING VIOLATIONS OF THE LABOR LAW IN FACTORIES, INVESTIGATED IN YEAR ENDED JUNE 30, 1921

Subject of Complaint	Number of Complaints in First Inspection District				Number of Complaints in Second Inspection District				Number of Complaints in Total State			
	Sustained	Not sustained	Total	Thereof anonymous	Sustained	Not sustained	Total	Thereof anonymous	Sustained	Not sustained	Total	Thereof anonymous
I. Administration	5	1	6	4	......	......	......	......	5	1	6	4
1. Posting of laws, permits, notices, etc.	4	1	5	4	......	......	......	......	4	1	5	4
2. Keeping of records, registers, etc	1	......	1	......	......	......	......	......	1	......	1	......
II. Sanitation	382	265	647	172	47	40	87	18	429	305	734	190
1. Toilet facilities:												
a. Water closets	213	120	333	74	16	9	25	6	229	129	358	80
b. Washrooms and sinks (including personal cleanliness)	20	18	38	14	7	7	14	2	27	25	52	16
c. Dressing rooms	20	16	36	17	1	1	2	......	21	17	38	17
2. Cleanliness or repair of work-rooms, halls, etc	84	59	143	33	1	3	4	1	85	62	147	34
3. Ventilation, heat and humidity:												
a. General	1	12	13	6	4	3	7	3	5	15	20	9
b. Removal of dust, fumes, etc	14	14	28	11	8	5	13	2	22	19	41	13
4. Lighting (eyesight protection)	18	2	20	4	......	3	3	1	18	5	23	5
5. Meals	......	5	5	4	1	......	1	1	1	5	6	5
6. Drinking water and drinking cups	8	9	17	3	4	4	8	1	12	13	25	4
7. Sanitation of living quarters	......	......	......	......	......	......	......	......	......	......	......	......
8. Mattresses	4	8	12	4	4	1	5	......	8	9	17	4
9. General unsanitary conditions	......	2	2	2	1	4	5	1	1	6	7	3
III. Accident Prevention	46	21	67	14	7	3	10	2	53	24	77	16
1. Elevators and hoistways	......	......	......	......	......	......	......	......	......	......	......	......
2. Machinery and apparatus	14	5	19	9	3	1	4	1	17	6	23	10
3. Electric switchboards, wires, etc	......	......	......	......	......	......	......	......	......	......	......	......
4. Stairs, platforms, pits, floors, etc. (including repairs)	2	1	3	......	1	1	2	1	3	2	5	1
5. Lighting to prevent accidents	18	8	26	5	2	......	2	......	20	8	28	5
6. Window cleaning	1	......	1	......	......	......	......	......	1	......	1	......
7. First aid appliances	11	7	18	......	1	......	1	......	12	7	19	......
8. Unsafe scaffolds	......	......	......	......	......	1	1	......	......	1	1	......
IV. Fire Protection	7	7	14	9	9	6	15	6	16	13	29	15
1. Structural conditions:												
a. Number of exits	......	......	......	......	......	......	......	......	......	......	......	......
b. Doors, doorways and windows	1	......	1	1	......	1	1	......	1	1	2	1

c. Stairways	......	......	......	......	......	1	1	......	......	1	1	......
d. Fire escapes	......	......	......	......	3	......	3	1	3	......	3	1
e. Partitions	......	......	......	......	......	......	......	......	......	......	......	......
f. Openings	......	......	......	......	......	......	......	......	......	......	......	......
g. Other or general	......	......	......	......	1	......	1	1	1	......	1	1
2. Clear means of egress:												
a. Locked doors	1	2	3	3	2	3	5	3	3	5	8	6
b. Other	5	5	10	5	2	......	2	1	7	5	12	6
3. Fire alarms	......	......	......	......	......	......	......	......	......	......	......	......
4. Fire drills and records	......	......	......	......	......	......	......	......	......	......	......	......
5. Waste and other inflammable materials	......	......	......	......	......	1	1	......	......	1	1	......
6. Gas jets	......	......	......	......	......	......	......	......	......	......	......	......
7. Smoking	......	......	......	......	1	......	1	......	1	......	1	......
8. Sprinklers	......	......	......	......	......	......	......	......	......	......	......	......
9. Number of occupants	......	......	......	......	......	......	......	......	......	......	......	......
10. Fire escapes other than structural conditions	......	......	......	......	......	......	......	......	......	......	......	......
11. Fire extinguishers	......	......	......	......	......	......	......	......	......	......	......	......
V. Children	57	78	135	78	33	37	70	15	90	115	205	93
1. Under 14 years of age	13	31	44	24	3	9	12	4	16	40	56	28
2. From 14 to 16 years:												
a. Certificates	38	34	72	48	26	20	46	5	64	54	118	53
b. Hours	2	5	7	3	2	7	9	4	4	12	16	7
c. Prohibited occupations	4	8	12	3	2	1	3	2	6	9	15	5
VI. Women and Minors	18	49	67	56	7	26	33	9	25	75	100	65
1. Hours	15	46	61	51	4	21	25	9	19	67	86	60
2. Prohibited occupations	......	......	......	......	2	5	7	......	2	5	7	......
3. Employment after childbirth	......	......	......	......	......	......	......	......	......	......	......	......
4. Seats for women	3	3	6	5	1	......	1	......	4	3	7	5
VII. Day of Rest	7	8	15	9	12	7	19	4	19	15	34	13
VIII. Miscellaneous	5	8	13	6	11	6	17	5	16	14	30	11
1. Payment of wages	2	1	3	1	3	4	7	5	5	5	10	6
2. Factories located on premises in violation of law	1	6	7	4	......	......	......	......	1	6	7	4
3. Hours of employees on street railways	......	1	1	......	......	......	......	......	......	1	1	......
4. Accident insurance	2	......	2	1	8	2	10	......	10	2	12	1
5. Not specified	......	......	......	......	......	......	......	......	......	......	......	......
IX. Not Within Department's Jurisdiction	......	47	47	29	......	4	4	......	......	51	51	29
Total	527	484	*1,011	†377	126	129	‡255	§59	653	613	1,266	436

* Contained in 671 separate communications.
† Contained in 314 separate communications.
‡ Contained in 156 separate communications.
§ Contained in 46 separate communications.

Table 13 — ILLEGAL HOURS AND PROHIBITED EMPLOYMENT OF WOMEN AND MINORS IN FACTORIES IN YEAR ENDED JUNE 30, 1921

	FIRST INSPECTION DISTRICT		SECOND INSPECTION DISTRICT		TOTAL STATE	
SUBJECT	Number of firms	Number of persons illegally employed	Number of firms	Number of persons illegally employed	Number of firms	Number of persons illegally employed
Illegal hours of —						
Women	30	124	28	181	58	305
Female minors	2	3	14	31	16	34
Male minors	......	......	7	11	7	11
Prohibited employment of —						
Women	......	......	1	2	1	2
Female minors	......	......	1	1	1	1
Male minors	2	2	2	2	4	4

Table 14 — VIOLATIONS OF DAY-OF-REST LAW IN FACTORIES IN YEAR ENDED JUNE 30, 1921

	FIRST INSPECTION DISTRICT		SECOND INSPECTION DISTRICT		TOTAL STATE	
SUBJECT	Number of firms	Number of persons illegally employed	Number of firms	Number of persons illegally employed	Number of firms	Number of persons illegally employed
Working on Sunday, no schedule posted	24	65	8	112	32	177
Working on designated day of rest	6	10	1	2	7	12
Working seven days a week	2	2	20	178	22	180

Table 15 — WORK OF HOMEWORK INSPECTORS

	1921	1920	1919	1918	1917	*1916	†1915
Investigations (including reinvestigations) of applications for license	2,791	3,933	3,024	3,964	3,703	2.167	2.789
Inspections of licensed buildings	24,930	19,643	20,718	20.108	15,396	14,707	14.512
Inspections of unlicensed buildings	5,471	4,230	5,952	4.194	4,234	1,901	2,250
Inspections of apartments	305,802	256,722	271,580	274,464	206,247	187,733	177,210
Apartments in which work was in progress	17,537	17,016	19,205	16,460	15,251	14,974	11.404
Number of persons found at work**	28,623	28,596	30,260	31,326	25,012	24,049	14.688
Inspections of licensed rear factory shops	159	123	82	172	240	378	310
Tagging cases (exclusive of "assisting") under section 102	1,179	1,420	813	464	322	275	122
Cases of contagious diseases reported in licensed tenement houses	8	5	25	15	18	14	28
Complaint investigations	221	323	240	249	249	371	206
Compliance visits	9,050	8,687	9,275	9,361	7,648	3.834	2,836
Department office calls	260	335	663	809	‡	‡	‡

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* Nine months ended June 30, 1916.

† Twelve months ended Sept. 30, 1915; up to 1915 year ended September 30.

‡ Comparative figures not available.

** Comprising workers employed in licensed tenement houses and licensed rear shops.

Table 16 — LICENSING OF TENEMENTS IN YEAR ENDED JUNE 30, 1921

Licenses

	New York City	Remainder of State	Total
Licenses outstanding July 1, 1920	17,012	1,433	18,445
Licenses granted in 1920–1921	2,276	189	2,465
Granted on first investigation	2,233	189	2,422
Granted on reinvestigation	43	....	43
Total	19,288	1,622	20,910
Licenses withdrawn in 1920–1921	3,729	99	3,828
Licenses withdrawn by cancellation	3,416	99	3,515
Licenses withdrawn by revocation	313	....	313
Licenses outstanding June 30, 1921	15,559	1,523	17,082
Licenses refused in 1920–1921	92	....	92

Applications for Licenses

	New York City	Remainder of State	Total
Applications pending July 1, 1920	16	....	16
Applications received in 1920–1921	2,382	190	2,572
Total	2,398	190	2,588
Applications cancelled in 1920–1921	137	....	137
Applications pending June 30, 1921	18	....	18

Table 17 — REGISTERS OF OUTSIDE WORKERS

YEAR ENDED JUNE 30*	Notifications issued	Registers filed	Not found or out of business	Reported no outside hands
1921	1,846	1,127	139	49
1920	3,159	1,386	316	183
1919	3,112	1,726	340	223
1918	4,833	2,158	482	452
1917	2,468	1,643	240	136
1916 (nine months)	2,336	1,459	232	161
1915	1,852	1,847	313	345
1914	3,407	1,886	154	167
1913	1,318	636	47	113
1912	4,164	1,976	253	212
1911	1,658	718	74	93
1910	2,924	1,999	463	262
1909	2,947	2,292	258	342
1908	2,743	2,101	330	432
1907	5,740	1,832	327	576

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* Year ended on September 30 up to and including 1915.

Table 18 — PERMITS TO FACTORY OWNERS TO SEND WORK TO TENEMENTS IN YEAR ENDED JUNE 30, 1921

Permits outstanding July 1, 1920	3,430
Issued during year	530
Cancelled and revoked during year	†105
Permits outstanding June 30, 1921	3,855

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† None were revoked during year ended June 30, 1921.

Table 19 — ORDERS ISSUED BY THE DIVISION OF HOMEWORK INSPECTION AND REPORTED COMPLIANCES THEREWITH IN YEAR ENDED JUNE 30, 1921

SUBJECT OF ORDERS	NUMBER OF ORDERS ISSUED IN —			NUMBER OF COMPLIANCES REPORTED IN —		
	First Inspection District	Second Inspection District	Total State	First Inspection District	Second Inspection District	Total State
II. Sanitation	3,227	600	3,827	3,537	599	4,136
1. Toilet facilities:						
a. Water closets	774	106	880	869	107	976
b. Repair of plumbing in living rooms	105	4	109	107	4	111
2. Cleanliness or repair of apartments, halls, etc.:						
a. Clean by scrubbing floors, etc., of apartments	1,080	146	1,226	1,102	145	1,247
b. Clean by scrubbing floors and stairs of halls	114	196	310	124	196	320
c. Repair walls of halls	59	....	59	64	....	64
d. Paint walls and ceilings of halls	689	....	689	675	....	675
e. Wash walls of halls	118	6	124	263	6	269
f. Remove rubbish and dirt from halls, cellars, yards, etc.	288	142	430	333	141	474
VII. Miscellaneous	137	....	137	137	....	137
1. Cease employing persons not members of family	46	....	46	55	....	55
2. Cease making articles of food, dolls, dolls' clothing or children's wearing apparel	91	....	91	82	....	82
3. Cease working in cellar	....	....	....	....	....	....
Total	3,364	600	3,964	3,674	599	*4,273

* This total of compliances includes 883 orders which were no longer outstanding as orders by reason of tagging, revocation of licenses, etc.

Table 20 — CHILDREN FOUND ILLEGALLY EMPLOYED IN LICENSED TENEMENT LIVING ROOMS IN YEAR ENDED JUNE 30, 1921

LOCALITY	NUMBER OF —		NUMBER OF CHILDREN —				Total children
			UNDER 14 YEARS OF AGE		14–16, WORKING WITHOUT CERTIFICATES		
	Tenements	Apartments	Boys	Girls	Boys	Girls	
New York City	268	302	70	272	4	75	421
Bronx	*55*	*70*	*14*	*68*		*13*	*95*
Brooklyn	*54*	*62*	*9*	*49*	*1*	*21*	*80*
Manhattan	*153*	*164*	*47*	*151*	*3*	*37*	*238*
Queens	*6*	*6*		*4*		*4*	*8*
Richmond							
Long Island outside of New York City							
Total — First District	268	302	70	272	4	75	421
Albany							
Binghamton							
Buffalo							
Rochester	10	10	2	9	1		12
Schenectady							
Syracuse							
Troy							
Utica							
Yonkers	5	5	1	5		3	9
Remainder of State	4	4		3		2	5
Total — Second District	19	19	3	17	1	5	26
Total — State	287	321	73	289	5	80	447

Table 21 — PROSECUTIONS FOR VIOLATIONS OF THE LABOR LAW IN TENEMENT HOUSES

SUBJECT OF LAW INVOLVED	FIRST INSPECTION DISTRICT†					
	Number of cases	RESULTS TO JUNE 30, 1921				
		Pending	Dismissed, acquitted or withdrawn*	Convicted		Fines
				Sentence suspended	Fined	
A — Proceedings Instituted Prior to July 1, 1920						
VIII. MISCELLANEOUS						
2. Making or finishing prohibited articles in licensed tenements	2	....	......	......	2	$40
B — Proceedings Instituted in Current Year (July 1, 1920 — June 30, 1921)						
V. CHILDREN						
1. Under 14 years	9	....	1	3	5	$110
2. From 14 to 16 years:						
a. Certificates	1	....	......	......	1	20
VIII. MISCELLANEOUS						
2. Making or finishing prohibited articles in licensed tenements	10	....	(1) 1	3	5	120
4. Working in unlicensed tenements	40	1	(2) 9	10	18	400
5. Failure to issue labels with articles sent to licensed tenements	1	....	......	......	1	20
Total	61	1	(3) 11	16	30	$670
Grand total	63	1	(3) 11	16	32	$710

† No cases for prosecution were submitted in the Second Inspection District.
* Withdrawn cases are given separately in parentheses.

Table 22 — VIOLATIONS OF THE LABOR LAW IN TENEMENTS REFERRED TO COUNSEL WITHOUT ISSUANCE OF ORDERS IN YEAR ENDED JUNE 30, 1921

SUBJECT OF VIOLATIONS	NUMBER OF VIOLATIONS		
First Inspection District	Referred	Prosecuted	Not prosecuted by order of Commission
V. CHILDREN:			
1. Under 14 years	9	9	....
2. From 14 to 16 years:			
a. Certificates	1	1	....
VIII. MISCELLANEOUS:			
4. Working in unlicensed tenements	42	40	2
5. Failure to issue labels with articles sent to licensed tenements	1	1	....
Total	53	51	2

Table 23 — WORK OF MERCANTILE INSPECTORS, 1914 TO 1921

YEAR ENDED JUNE 30 *	INSPECTIONS		INVESTIGATIONS OF —	
	Regular	Special	Complaints	Compliances
1921	65,428	4,793	852	48,709
1920	49,710	5,358	937	48,722
1919	41,453	5,358	1,191	55,0[illegible]9
1918	40,926	5,772	1,388	49,718
1917	26,060	7,074	1,426	35,270
1916 (nine months)	24,066	2,861	1,193	16,717
1915	24,006	5,018	1,167	20,672
1914	24,521	5,103	913	21,472

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* Previous to 1916 inspection year ended on September 30.

Table 24 — WORK OF MERCANTILE INSPECTORS, BY LOCALITIES

	REGULAR INSPECTIONS		SPECIAL INSPECTIONS		INVESTIGATIONS OF —			
					COMPLAINTS		COMPLIANCES	
	1920	1921	1920	1921	1920	1921	1920	1921
New York City	34,562	48,663	3,717	3,778	809	764	32,181	34,817
Buffalo	2,657	4,670	161	218	39	17	1,076	2,040
Rochester	1,346	1,443	184	128	22	13	1,195	1,068
Total — First class cities	38,565	54,776	4,062	4,124	870	794	34,452	37,925
Albany	697	692	21	32	12	9	928	601
Binghamton	267	343	3	5	3	4	226	72
Schenectady	642	422	22	10	7	4	390	345
Syracuse	1,498	791	190	2	15	13	766	647
Troy	353	351	9	6	......	1	520	335
Utica	531	363	4	1	1	6	369	225
Yonkers	632	502	89	114	4	8	963	448
Third class cities	6,473	6,874	939	445	24	12	10,070	7,964
Villages *	52	314	19	54	1	1	38	147
Grand total	49,710	65,428	5,358	4,793	937	852	48,722	48,709

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* Enforcement of " one day of rest in seven " law.

Table 25 — ORDERS ISSUED BY THE DIVISION OF MERCANTILE INSPECTION IN YEAR ENDED JUNE 30, 1921

SUBJECT OF ORDERS	NUMBER OF ORDERS ISSUED IN —		
	First inspection district*	Second inspection district†	Total state
I. Administration	**53,255**	**17,002**	**70,257**
1. Posting of laws, permits, notices, etc	53,247	17,002	70,249
2. Keeping of records, registers, etc	8	....	8
II. Sanitation	**21,260**	**9,034**	**30,294**
1. Toilet facilities:			
a. Water closets	15,438	6,434	21,872
b. Washrooms and sinks (including personal cleanliness)	2,821	1,585	4,406
c. Dressing rooms	370	127	497
2. Cleanliness or repair of salesrooms, etc	1,859	585	2,444
3. Ventilation, heat and humidity	....	3	3
4. Lighting (eyesight protection)	90	80	170
5. Meals	29	6	35
6. Drinking water and drinking cups	5	3	8
7. Marking mattresses	648	211	859
III. Accident Prevention	**895**	**4,218**	**5,113**
1. Machinery and apparatus	20	54	74
2. Electric switchboards, wires, etc	6	4	10
3. Stairs	740	1,562	2,302
4. Lighting to prevent accidents	15	129	144
5. Window cleaning	114	....	114
6. First aid appliances	....	....	....
§7. Elevators and hoistways	....	2,469	2,469
V. Children	**2**	....	**2**
2. From 14–16 years:			
b. Hours	2	....	2
c. Employment in basements	....	....	....
VI. Women	**25**	**17**	**42**
1. Employment after childbirth	....	....	....
2. Seats for women	24	14	38
3. Hours	....	2	2
4. Employment in basements	1	1	2
VII. Day of Rest	**6,561**	**‡1,830**	**8,391**
VIII. Payment of Wages Without Deductions for Benefit Funds	**1**	**1**	**2**
Total	**81,999**	**32,102**	**114,101**

* Comprises New York City and Glen Cove.
† Comprises all cities other than New York City and Glen Cove.
‡ Includes 181 orders in localities other than cities.
§ Added in April, 1921.

Table 26 — COMPLIANCES WITH ORDERS REPORTED BY THE DIVISION OF MERCANTILE INSPECTION IN YEAR ENDED JUNE 30, 1921

SUBJECT	NUMBER OF COMPLIANCES REPORTED —								
	IN FIRST INSPECTION DISTRICT (a) ON ORDERS ISSUED —			IN SECOND INSPECTION DISTRICT (b) ON ORDERS ISSUED —			IN TOTAL STATE ON ORDERS ISSUED —		
	Prior to July 1, 1920	Between July 1, 1920, and June 30, 1921	Total	Prior to July 1, 1920	Between July 1, 1920, and June 30, 1921	Total	Prior to July 1, 1920	Between July 1, 1920, and June 30, 1921	Total
I. Administration	**3**	**53,252**	**53,255**	**2**	**16,999**	**17,001**	**5**	**70,251**	**70,256**
1. Posting of laws, permits, notices, etc.	3	53,247	53,250	2	16,999	17,001	5	70,246	70,251
2. Keeping of records, registers, etc.	....	5	5	....	....	....	....	5	5
II. Sanitation	**3,870**	**19,411**	**23,281**	**2,768**	**6,105**	**8,873**	**6,638**	**25,516**	**32,154**
1. Toilet facilities:									
a. Water closets	2,713	14,120	16,833	1,988	4,379	6,367	4,701	18,499	23,200
b. Washrooms and sinks (including personal cleanliness)	687	2,621	3,308	477	1,021	1,498	1,164	3,642	4,806
c. Dressing rooms	95	284	379	47	61	108	142	345	487
2. Cleanliness or repair of sales rooms, etc.	270	1,654	1,924	182	408	590	452	2,062	2,514
3. Ventilation, heat and humidity	....	....	....	....	1	1	....	1	1
4. Lighting (eyesight protection)	18	90	108	5	80	85	23	170	193
5. Meals	2	22	24	....	2	2	2	24	26
6. Drinking water and drinking cups	....	5	5	....	3	3	....	8	8
7. Marking mattresses	85	615	700	69	150	219	154	765	919
III. Accident Prevention	**259**	**786**	**1,045**	**289**	**1,545**	**1,834**	**548**	**2,331**	**2,879**
1. Machinery and apparatus	1	16	17	....	47	47	1	63	64
2. Electric switchboards, wires, etc.	....	5	5	2	4	6	2	9	11
3. Stairs	141	654	795	267	1,086	1,353	408	1,740	2,148
4. Lighting to prevent accidents	3	14	17	20	94	114	23	108	131
5. Window cleaning	114	97	211	....	....	....	114	97	211
6. First aid appliances	....	....	....	....	....	....	....	....	....
*7. Elevators and hoistways	....	....	....	....	314	314	....	314	314
V. Children	....	....	....	....	....	....	....	....	....
2. From 14–16 years:									
b. Hours	....	....	....	....	....	....	....	....	....
c. Employment in basements	....	....	....	....	....	....	....	....	....

VI. Women	4	22	26	4	10	14	8	32	40
1. Employment after childbirth	....	....	....	....	....	....	....	....	....
2. Seats for women	4	22	26	4	7	11	8	29	37
3. Hours	....	....	....	....	2	2	....	2	2
4. Employment in basements	....	....	....	....	1	1	....	1	1
VII. Day of Rest	381	6,561	6,942	†251	‡1,634	1,885	632	8,195	8,827
VIII. Payment of Wages Without Deduction for Benefit Funds	....	1	1	....	....	....	....	1	1
Total	4,517	80,033	84,550	3,314	26,293	29,607	7,831	106,326	§114,157

(a) Comprises New York City and Glen Cove.

(b) Comprises all cities other than New York City and Glen Cove.

* Added in April, 1921.

† Includes 16 compliances in localities other than cities.

‡ Includes 101 compliances in localities other than cities.

§ The total compliances include the waival of 3,049 orders. These waivals resulted from the cessation of the illegal conditions by reason of modifications of the law or Industrial Code, or accompanying circumstances such as to make the original orders no longer necessary. The distribution of the 3,049 orders was as follows: in the First Inspection District, 656 and 1,165 on orders issued prior to July 1, 1920, and between July 1, 1920 and June 30, 1921, respectively; in the Second Inspection District, 567 and 661 on orders issued prior to July 1, 1920, and between July 1, 1920 and June 30, 1921, respectively.

Table 27 — PROSECUTIONS FOR VIOLATIONS OF THE

SUBJECT OF LAW INVOLVED	FIRST INSPECTION DISTRICT					
	Number of cases	RESULTS TO JUNE 30, 1921				
		Pending	Dismissed, acquitted or withdrawn*	Convicted		Fines
				Sentence suspended	Fined	
	A — Proceedings Institu					
II. SANITATION						
1. Toilet facilities:						
a. Water closets	10	2	4	1	3	$7
b. Washrooms and sinks (including personal cleanliness)	1	....	......	......	1	20
2. Cleanliness or repair of salesrooms, halls, etc	1	....	......	1	....	..
7. Mattresses, etc	3	....	......	......	3	13
V. CHILDREN						
1. Under 14 years	10	....	......	1	9	22
2. From 14 to 16 years:						
a. Certificates	4	....	(1) 1	......	2	4
VI. WOMEN AND MINORS						
1. Hours	4	....	......	3	1	50
VII. DAY OF REST						
Day of rest	5	....	......	......	5	10
Total	38	2	(1) 5	6	24	$
	B — Proceedings Instituted in Curre					
II. SANITATION						
1. Toilet facilities:						
a. Water closets	31	1	(2) 21	5	2	$4
b. Washrooms and sinks (including personal cleanliness)	9	....	(1) 6	2	....	....
c. Dressing rooms	....	....	......	......	....	.....
2. Cleanliness or repair of salesrooms, halls, etc	6	1	3	1	1	2
7. Mattresses, etc	....	....	......	......	....	.....
III. ACCIDENT PREVENTION						
4. Stairs, platforms, pits, floors, etc. (including repairs)	2	....	2	......	....	...
5. Lighting to prevent accidents	....	....	......	......	....	...
V. CHILDREN						
1. Under 14 years	65	1	(1) 4	17	42	91
2. From 14 to 16 years:						
a. Certificates	58	....	(2) 5	21	30	67
b. Hours	4	....	......	2	2	40
VI. WOMEN AND MINORS						
1. Hours	27	1	3	8	15	33
VII. DAY OF REST						
Day of of rest	17	1	3	7	6	12
Total	219	5	(6) 47	63	98	$2,14
Grand total	257	7	(7) 52	69	122	$2,

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* Withdrawn cases are given separately in parentheses.

LABOR LAW IN MERCANTILE ESTABLISHMENTS

SECOND INSPECTION DISTRICT						TOTAL STATE						Subject Number
	RESULTS TO JUNE 30, 1921						RESULTS TO JUNE 30, 1921					
Number of cases	Pending	Dismissed, acquitted or withdrawn *	Convicted		Fines	Number of cases	Pending	Dismissed, acquitted or withdrawn *	Convicted		Fines	
			Sentence suspended	Fined					Sentence suspended	Fined		
Prior to July 1, 1920												
4	....	4	.....	...	....	14	2	8	1	3	$70	II 1 a
.....	....	......	.....	...	....	1	....	......	.....	1	20	b
......	....	......	.....	...	....	1	....	......	1	...	.....	2
1	....	......	1	...	....	4	....	......	1	3	150	7
2	....	1	1	...	....	12	....	1	2	9	225	V 1
......	....	......	.....	...	....	4	....	(1) 1	.....	2	45	2 a
13	7	(3) 3	.....	...	....	17	7	(3) 3	3	1	50	VI 1
......	....	......	.....	...	....	5	....	......	.....	5	165	VII
20	7	(3) 8	2	...	....	58	9	(4) 13	8	24	$725	
Year (July 1, 1920–June 30, 1921)												
16	1	15	.....	...	....	47	2	(2) 36	5	2	$45	II 1 a
12	....	12	.....	...	....	21	....	(1) 18	2	...	.....	b
1	....	1	.....	...	....	1	....	1	.....	...	.....	c
1	....	1	.....	...	....	7	1	4	1	1	20	2
1	....	......	1	...	....	1	....	......	1	...	.....	7
3	....	3	.....	...	....	5	....	5	.....	...	.....	III 4
1	....	1	.....	...	....	1	....	1	.....	...	.....	5
8	1	......	4	3	$65	73	2	(1) 4	21	45	975	V 1
27	....	(2) 1	20	4	80	85	....	(4) 6	41	34	750	2 a
8	....	1	4	3	65	12	....	1	6	5	105	b
16	....	(1) 2	9	4	60	43	1	(1) 5	17	19	395	VI 1
......	....	......	.....	...	....	17	1	3	7	6	120	VII
94	2	(3) 37	38	14	$270	313	7	(9) 84	101	112	$2,410	
114	9	(6) 45	40	14	$270	371	16	(13) 97	109	136	$3,135	

Table 28 — VIOLATIONS OF THE LABOR LAW IN MERCANTILE ESTABLISHMENTS REFERRED TO COUNSEL WITHOUT ISSUANCE OF ORDERS IN YEAR ENDED JUNE 30, 1921

SUBJECT OF VIOLATION	NUMBER OF VIOLATIONS		
	Referred	Prosecuted	Not prosecuted by order of Commission
(a) First Inspection District			
V. CHILDREN:			
1. Under 14 years	65	65	....
2. From 14 to 16 years:			
a. Certificates	63	58	5
b. Hours	4	4	....
VI. WOMEN AND MINORS:			
1. Hours	27	27	....
VII. DAY OF REST:			
Day of rest	18	17	1
Total	177	171	6
(b) Second Inspection District			
V. CHILDREN:			
1. Under 14 years	8	8	....
2. From 14 to 16 years:			
a. Certificates	35	27	8
b. Hours	8	8	....
VI. WOMEN AND MINORS:			
1. Hours	18	16	2
Total	69	59	10
(c) Total State			
V. CHILDREN:			
1. Under 14 years	73	73	....
2. From 14 to 16 years:			
a. Certificates	98	85	13
b. Hours	12	12	....
VI. WOMEN AND MINORS:			
1. Hours	45	43	2
VII. DAY OF REST:			
Day of rest	18	17	1
Total	246	230	16

Table 29 — CHILDREN FOUND ILLEGALLY EMPLOYED IN MERCANTILE ESTABLISHMENTS IN YEAR ENDED JUNE 30, 1921

LOCALITY	Number of establishments	NUMBER OF CHILDREN								
		UNDER 14 YEARS OF AGE		14–16, WORKING —						Total children
				WITHOUT CERTIFICATES		WITHOUT CERTIFICATES AND ILLEGAL HOURS		ILLEGAL HOURS		
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
New York City	2,624	1,259	24	1,234	83	202	12	35	8	2,857
Bronx	*321*	*160*	*3*	*117*	*2*	*41*	*3*	*6*	*1*	*333*
Brooklyn	*645*	*352*	*10*	*271*	*28*	*51*	*4*	*17*	*5*	*738*
Manhattan	*1,516*	*693*	*10*	*764*	*48*	*96*	*4*	*11*	*2*	*1,628*
Queens	*88*	*32*	*1*	*51*	*3*	*8*	*1*	*1*	....	*97*
Richmond	*54*	*22*	....	*31*	*2*	*6*	....	....	....	*61*
Glen Cove	1	....	....	1	....	....	....	....	....	1
Total — First District	2,625	1,259	24	1,235	83	202	12	35	8	2,858
Albany	4	1	....	3	....	....	....	....	....	4
Binghamton	3	....	....	3	....	....	....	....	....	3
Buffalo	231	42	23	98	40	27	13	6	....	249
Rochester	73	29	1	29	3	7	4	....	....	73
Schenectady	11	2	1	5	1	....	....	2	....	11
Syracuse	14	3	....	11	....	1	....	....	....	15
Troy	5	1	....	5	....	....	....	....	....	6
Utica	13	3	2	4	3	1	....	1	....	14
Yonkers	91	36	1	41	1	24	3	5	....	111
Other cities	340	126	3	176	27	39	6	6	1	384
Total — Second District	785	243	31	375	75	99	26	20	1	870
Total — State	3,410	1,502	55	1,610	158	301	38	55	9	3,728

Table 30 — CHILDREN FOR WHOM PROOF OF AGE WAS DEMANDED IN MERCANTILE ESTABLISHMENTS IN YEAR ENDED JUNE 30, 1921

	Age proven 16	Age proven 14–16 (certificate secured)	Age proven less than 14 (discharged)	Discharged without proof of age
First Inspection District:*				
Boys	21	6	....	[illegible]
Girls	8	1	....	6
Total	29	7	....	36
Second Inspection District:†				
Boys	1	1	....	3
Girls	....	....	....	2
Total	1	1	....	5
Total State:				
Boys	22	7	....	33
Girls	8	1	....	8
Total	30	8	....	41

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* Comprises New York City and Glen Cove.
† Comprises cities other than New York City and Glen Cove.

Table 31 — CHILDREN 14 TO 16 YEARS OF AGE FOUND EMPLOYED IN MERCANTILE ESTABLISHMENTS ‡

LOCALITY	Number of Establishments	NUMBER OF CHILDREN FOUND EMPLOYED		
		Boys	Girls	Total
	A. Number Employed July 1, 1920, to June 30, 1921			
First Class Cities				
New York City	2,483	3,481	1,271	4,752
Bronx	*170*	*171*	*27*	[illegible]
Brooklyn	*583*	*682*	*312*	[illegible]
Manhattan	*1,595*	*2,484*	*918*	[illegible]
Queens	*85*	*93*	*9*	[illegible]
Richmond	*50*	*51*	*5*	[illegible]
Buffalo	305	373	233	[illegible]
Rochester	107	120	48	[illegible]
Total — First class cities	2,895	3,974	1,552	[illegible]
Second Class Cities				
Albany	15	33	28	61
Binghamton	6	7	....	[illegible]
Schenectady	11	10	14	24
Syracuse	27	24	6	30
Troy	9	10	....	10
Utica	20	25	17	[illegible]
Yonkers	80	83	6	[illegible]
Total — Second class cities	168	192	71	[illegible]

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‡ See table 29 for number of children, under 14 years of age, found illegally employed.

Table 31 — (*Continued*)

LOCALITY	Number of Establishments	NUMBER OF CHILDREN FOUND EMPLOYED		
		Boys	Girls	Total
	A. Number Employed July 1, 1920, to June 30, 1921			
Third Class Cities				
Amsterdam	4	4	6	10
Auburn	9	7	4	11
Batavia	8	7	1	8
Beacon	10	10	....	10
Canandaigua	7	6	2	8
Cohoes	2	2	....	2
Corning	2	1	1	2
Cortland	1	1	....	1
Dunkirk	7	19	....	19
Elmira	6	10	....	10
Fulton	3	3	....	3
Geneva	9	8	1	9
Glen Cove	1	1	....	1
Glens Falls	1	1	....	1
Gloversville	6	8	1	9
Hornell	9	12	....	12
Hudson	....	....	....	....
Ithaca	3	3	4	7
Jamestown	42	41	7	48
Johnstown	3	2	1	3
Kingston	13	12	1	13
Lackawanna	3	3	....	3
Little Falls	5	4	1	5
Lockport	8	7	2	9
Mechanicville	....	....	....	....
Middletown	10	10	....	10
Mount Vernon	15	14	5	19
Newburgh	34	31	8	39
New Rochelle	3	4	1	5
Niagara Falls	18	21	4	25
North Tonawanda	9	9	2	11
Norwich	....	....	....	....
Ogdensburg	....	....	....	....
Olean	8	9	....	9
Oneida	1	1	....	1
Oneonta	13	14	....	14
Oswego	11	15	....	15
Plattsburg	1	1	....	1
Port Jervis	9	9	....	9
Poughkeepsie	64	65	4	69
Rensselaer	3	2	2	4
Rome	6	9	....	9
Salamanca	8	7	1	8
Saratoga Springs	1	1	....	1
Sherrill	....	....	....	....
Tonawanda	7	13	....	13
Watertown	4	4	....	4
Watervliet	....	....	....	....
White Plains	4	4	....	4
Total — Third class cities	391	415	59	474
Total — All cities	3,454	4,581	1,682	6,263

Table 31 — (*Continued*)

LOCALITY	Number of Establishments	NUMBER OF CHILDREN FOUND EMPLOYED Boys	Girls	Total
	B. Total Number Employed, 1909 to 1921			
First class cities:				
1921	2,895	3,974	1,552	5,526
1920	2,366	3,577	1,795	5,372
1919	2,509	3,269	2,057	5,326
1918	2,359	3,234	1,416	4,650
1917	2,147	2,951	1,657	4,608
*1916	1,737	2,642	1,311	3,953
1915	†	2,604	1,049	3,653
1914	†	3,296	2,471	5,767
1913	†	3,734	2,120	5,854
1912	†	2,471	1,698	4,169
1911	†	2,075	1,332	3,407
1910	†	2,805	1,316	4,121
1909	†	3,681	1,633	5,314
Second class cities:				
1921	168	192	71	263
1920	249	290	176	466
1919	360	407	151	558
1918	332	408	177	585
1917	367	462	134	596
*1916	352	458	123	581
1915	†	293	41	334
§1914	†	634	247	881
Third class cities:				
1921	391	415	59	474
1920	655	680	119	799
§1919	7	8	....	8
Total — All cities: §				
1921	3,454	4,581	1,682	6,263
1920	3,270	4,547	2,090	6,637
1919	2,876	3,684	2,208	5,892
1918	2,691	3,642	1,593	5,235
1917	2,514	3,412	1,791	5,204
*1916	2,089	3,100	1,434	4,534
1915	†	2,897	1,090	3,987
1914	†	3,930	2,718	6,648
1913	†	3,734	2,120	5,854
1912	†	2,471	1,698	4,169
1911	†	2,075	1,332	3,407
1910	†	2,805	1,316	4,121
1909	†	3,681	1,633	5,314

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* Nine months ended June 30, 1916.
† Comparative data not available.
§ The law empowering the Department of Labor to inspect mercantile establishments became effective in second class cities on March 28, 1913, and in third class cities on May 10, 1919.

Table 32 — ILLEGAL HOURS OF WOMEN AND MALE MINORS AND PROHIBITED EMPLOYMENT OF FEMALE MINORS IN MERCANTILE ESTABLISHMENTS IN YEAR ENDED JUNE 30, 1921

SUBJECT	FIRST INSPECTION DISTRICT* Number of firms	Number of persons illegally employed	SECOND INSPECTION DISTRICT† Number of firms	Number of persons illegally employed	TOTAL STATE Number of firms	Number of persons illegally employed
Illegal hours of —						
Women	198	250	72	93	270	343
Male minors	....	....	4	4	4	4
Prohibited employment of —						
Female minors	58	73	13	13	71	86

* Comprises New York City and Glen Cove.
† Comprises cities other than New York City and Glen Cove.

Table 33 — VIOLATIONS OF DAY-OF-REST LAW IN MERCANTILE ESTABLISHMENTS IN YEAR ENDED JUNE 30, 1921

Subject	First Inspection District*		Second Inspection District †		Total State	
	Number of firms	Number of persons illegally employed	Number of firms	Number of persons illegally employed	Number of firms	Number of persons illegally employed
Working on Sunday, no schedule posted	384	456	107	118	491	574
Working on designated day of rest	52	58	5	5	57	63
Working seven days a week	48	52	13	14	61	66

* Comprises New York City and Glen Cove.
† Comprises cities other than New York City and Glen Cove.

TABLE 34 — COMPLAINTS, ALLEGING VIOLATIONS OF THE LABOR LAW IN MERCANTILE ESTABLISHMENTS, INVESTIGATED

Subject of Complaint	Number of Complaints			
	Sustained	Not sustained	Total	Thereof anonymous
Administration				
Posting of laws, permits, notices, etc	3	2	5	5
Sanitation				
Toilet facilities:				
Water closets	35	38	73	55
Wash rooms	5	6	11	9
Dressing rooms	3	3	6	5
Cleanliness or repair of salesrooms	18	21	39	33
Ventilation, heat and humidity	2	5	7	5
Lighting (eyesight protection)	1	....	1	1
Lunch hour	2	6	8	7
Drinking water	1	1	2	1
Marking mattresses	11	7	18	4
Accident Prevention				
Window cleaning	3	1	4	4
General	1	2	3	2
Children				
Under 14 years of age	83	113	196	134
From 14–16 years of age:				
Without certificates	28	32	60	40
Hours	11	20	31	25
Women and Minors				
Hours	34	83	117	84
Prohibited occupations	3	4	7	6
Seats for women	1	4	5	4
Day of Rest				
Day of rest	109	142	251	221
Miscellaneous				
Payment of wages	1	....	1	....
Not specified	....	6	6	6
Total 1921	355	496	851	651
Total 1920	342	595	937	560
Total 1919	547	644	1,191	524
Total 1918	550	838	1,388	673
Total 1917	517	909	1,426	937
Total 1916 †	508	685	1,193	814
Total 1915	534	633	1,167	753
Total 1914	447	466	913	556
Total 1913	145	108	253	97
Total 1912	95	140	235	77
Total 1911	122	100	222	81

† Nine months ended June 30, 1916.

Table 35 — CASES OF INDUSTRIAL DISEASE REPORTED TO DEPARTMENT OF LABOR UNDER SECTION 206 OF THE LABOR LAW IN TEN YEARS

INDUSTRY	YEAR ENDED AUGUST 31, 1921		YEAR ENDED AUGUST 31, 1920		YEAR ENDED AUGUST 31, 1919		YEARS ENDED AUGUST 31, 1912–1921, INCLUSIVE	
	Number of cases	Thereof deaths*	Number of cases	Thereof deaths*	Number of cases	Thereof deaths*	Number of cases	Thereof deaths*
Lead Poisoning								
Painting	8	1	4	2	12	1	358	65
House, structural or ship	7	1	3	1	11	1	280	53
Factory or shop	1		1	1	1		78	12
Automobiles	*1*		*1*	*1*	*1*		*27*	*2*
Carriages and wagons							*23*	*6*
Signs, illustrations, theatrical scenery							*8*	*1*
Agricultural implements							*5*	
Cars							*3*	*1*
Sheet metal work							*3*	
Engines							*2*	*1*
Aeroplanes							*1*	
Barbers' supplies							*1*	
Bicycles							*1*	
Electrical goods							*1*	
Pianos							*1*	
Window shades							*1*	*1*
Machinery							*1*	
Manufacturing	20	2	12		22	2	333	26
Storage batteries	11		6		8		151	3
White lead, paints and colors	2		1		1	1	63	5
Smelting or casting lead, solder, etc.	2		1				21	4
Printing	1	1	1		1		20	5
Wire goods					1		8	
Electrical goods	1		2		6	1	15	2
Brass and copper goods	1	1			3		9	1
Rubber goods	1				1		7	
Tin cans							5	2
Smelting copper							4	
Cut glass							3	1
Linoleum							3	
Sheet metal work							3	
Brewery							2	1

White metal goods							2	1
Arsenate of lead							1	
Artificial flowers							1	1
Bridges							1	
Canned goods							1	
Casket trimmings							1	
Chinaware			1				2	
Cigars							1	
Cream separators							1	
Projectiles							1	
Pumps							1	
Telephones							1	
Type							1	
Typewriters							1	
Surgical instruments							1	
Gas meters					1		1	
Automobiles	1						1	
Plumbing					1		11	2
Electrical power station							6	
Electrical cable repairs							1	
Tree spraying							1	
Shipbuilding					1		1	
Miscellaneous or indefinite			2		1		27	11
Total — Lead Poisoning	28	3	18	2	37	3	738	104

Caisson Disease

Caisson work (tunnels, shafts, etc.)	1				14		473	4

Anthrax

Tanneries			11	1	2		37	6
Docks and warehouses	1		2				16	2
Farm work							8	3
Brush making			1		2		7	2
Boot and shoe manufacture	1		1				3	
Driver	1		1				3	1
Dry goods store							1	
Junk handler							1	
Rugs, woolen (manufacture)							1	
Veterinary practice							1	
Stable man							1	1
Miscellaneous			1		3		8	1
Total — Anthrax	3		17	1	7		87	16

* Represent cases in which disease report or death certificate showed the industrial disease to have been the immediate or a contributory cause of death.

Table 35 — CASES OF INDUSTRIAL DISEASE REPORTED TO DEPARTMENT OF LABOR UNDER SECTION 65 OF THE LABOR LAW IN TEN YEARS — (*Concluded*)

INDUSTRY	YEAR ENDED AUGUST 31, 1921		YEAR ENDED AUGUST 31, 1920		YEAR ENDED AUGUST 31, 1919		YEARS ENDED AUGUST 31, 1912–1921, INCLUSIVE	
	Number of cases	Thereof deaths*	Number of cases	Thereof deaths*	Number of cases	Thereof deaths*	Number of cases	Thereof deaths*
Brass Poisoning								
Brass goods (manufacture)	1	....	....	....	....	....	5	1
Automobiles (manufacture)	....	....	....	....	....	....	3	....
Printing	....	....	....	....	....	....	2	1
Optical instruments (manufacture)	....	....	....	....	....	....	1	....
Photographic apparatus (manufacture)	....	....	....	....	....	....	1	....
Railway repair shop	....	....	....	....	....	....	1	....
Safes (manufacture)	....	....	....	....	....	....	1	....
Thermometers (manufacture)	....	....	....	....	....	....	1	....
Miscellaneous	....	....	....	....	....	....	4	....
Total — Brass Poisoning	1	....	....	....	....	....	19	2
Arsenic Poisoning								
Paris green (manufacture)	....	....	....	....	....	....	10	....
Arsenate of lead (manufacture)	....	....	....	....	....	....	1	....
Drugs (manufacture)	....	....	....	....	....	....	1	....
Paints (manufacture)	....	....	....	....	....	....	1	....
Tanneries	....	....	....	....	....	....	1	....
Insect exterminating	....	....	....	....	....	....	1	....
Total — Arsenic Poisoning	....	....	....	....	....	....	15	....
Mercury Poisoning								
Chemicals (manufacture)	....	....	....	....	....	....	2	1
Thermometers (manufacture)	....	....	1	....	2	....	5	....
Hatters' fur (manufacture)	....	....	....	....	....	....	2	....
Furs (handling)	....	....	....	....	....	....	1	....
Glass blowing	....	....	....	....	....	....	1	....
Rubber goods (manufacture)	....	....	....	....	....	....	1	1
Total — Mercury Poisoning	....	....	1	....	2	....	12	2

Wood Alcohol Poisoning								
Painting	....	....	....	....	....	....	2	1
Alcohol (manufacture)	....	....	....	....	....	....	1	....
Shoe and stove polish (manufacture)	....	....	....	....	1	....	1	....
Total — Wood Alcohol Poisoning	....	....	....	....	1	....	4	1
Phosphorus Poisoning								
Matches (manufacture)	....	....	....	....	....	....	1	1
Grand total	33	3	36	3	61	3	1,349	130

* Represent cases in which disease report or death certificate showed the industrial disease to have been the immediate or a contributory cause of death.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
ALBANY COUNTY	*305*	*244*
Cities		
Albany	205	157
Cohoes	52	61
Watervliet	28	15
Villages		
Altamont	....	......
Green Island	7	3
Ravena	1	2
Voorheesville	....	......
Towns		
Berne	....	1
Bethlehem	4	......
Coeymans	5	2
Colonie	2	1
Guilderland	....	......
Knox	1	1
New Scotland	....	......
Rensselaerville	*	*
Westerlo	....	1
ALLEGANY COUNTY	*4*	*1*
Villages		
Andover	....	......
Bolivar	....	......
Canaseraga	....	......
Cuba	....	......
Richburg	....	......
Wellsville	2	1
Towns		
Allen	....	......
Alma	....	......
Almond	....	......
Andover	....	......
Belfast	....	......
Birdsall	....	......
Bolivar	....	......
Burns	....	......
Caneadea	....	......
Centerville	....	......
Genesee	....	......
Granger	....	......
Grove	....	......
Hume	....	......
Independence	....	......
Rushford	....	......
Scio	....	......
Ward	....	......
Wellsville	....	......
West Almond	....	......
Willing	....	......
Wirt	....	......
Consolidated Health Districts		
Alfred — village Alfred — town	....	......
Belmont — village Amity — town	2	......
Angelica — village Angelica — town	....	......
Friendship — village Friendship — town	....	......
Clarksville — town Cuba — town New Hudson — town	*	*
BRONX COUNTY (See under New York City).§		

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
BROOME COUNTY	*123*	[illegible]
City		
Binghamton	108	66
Villages		
Deposit	....	......
Endicott	3	3
Johnson City	7	3
Lisle	....	......
Port Dickinson	....	....
Towns		
Barker	....	....
Binghamton	....	......
Chenango	....	......
Colesville	....	......
Conklin	....	......
Dickinson	....	......
Fenton	....	......
Kirkwood	1	1
Lisle	....	......
Maine	1	......
Nanticoke	....	......
Sanford	....	......
Union	1	......
Vestal	1	[illegible]
Consolidated Health Districts		
Whitney Point — village Triangle — town	1	..
Windsor — village Windsor — town	....	......
CATTARAUGUS COUNTY	*87*	[illegible]
Cities		
Olean	60	[illegible]
Salamanca	12	[illegible]
Villages		
Allegany	1	......
Cattaraugus	1	......
Delevan	....	......
East Randolph	....	......
Ellicottville	....	......
Franklinville	2	[illegible]
Gowanda	2	......
Perrysburg	....	......
Randolph	1	[illegible]
South Dayton	....	......
Towns		
Allegany	3	.
Ashford	....	......
Cold Spring	....	......
Conewango	....	......
Dayton	....	......
East Otto	....	......
Elko	....	
Ellicottville	....	......
Farmersville	4	3
Franklinville	....	......
Freedom	....	......
Great Valley	....	......
Hinsdale	....	......
Humphrey	...	......
Ischua	....	1
Leon	....	......
Lyndon	....	......
Machias	....	......

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* Not reported.

§ At end of table.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	Girls
CATTARAUGUS COUNTY— (*Concluded*)		
Mansfield	....	......
Napoli	....	......
New Albion	....	......
Olean	....	......
Otto	....	......
Perrysburg	....	......
Persia	....	......
Randolph	....	......
Red House	....	......
Salamanca	*	*
South Valley	....	......
Yorkshire	....	......
Consolidated Health Districts		
Limestone — village Carrollton — town	1	......
Little Valley — village Little Valley — town	....	......
Portville — village Portville — town	....	......
CAYUGA COUNTY	*92*	*94*
City		
Auburn	87	88
Villages		
Cayuga	....	......
Cato	....	......
Fair Haven	....	......
Meridian	....	......
Port Byron	....	......
Weedsport	....	......
Towns		
Aurelius	....	......
Brutus	....	......
Cato	....	......
Conquest	....	......
Fleming	....	......
Genoa	....	......
Ira	1	......
Locke	....	......
Ments	....	......
Montezuma	....	......
Niles	....	......
Owasco	....	......
Scipio	....	......
Sempronius	....	......
Sennett	1	1
Sterling	....	......
Summer Hill	....	......
Throop	1	......
Venice	....	......
Victory	2	......
Consolidated Health Districts		
Aurora — village Ledyard — town	....	......
Moravia — village Moravia — town	....	3
Union Springs — village Springport — town	....	2
CHAUTAUQUA COUNTY	*236*	*297*
Cities		
Dunkirk	50	72
Jamestown	148	189
CHAUTAUQUA COUNTY— (*Concluded*)		
Villages		
Brocton	....	......
Celoron	....	......
Chautauqua Lake Ass'n	....	......
Cherry Creek	....	......
Falconer	6	7
Forestville	4	5
Fredonia	19	17
Lakewood	....	......
Mayville	*	*
Panama	....	......
Silver Creek	4	3
Sinclairville	....	......
Towns		
Arkwright	....	......
Busti	....	......
Carroll	....	......
Charlotte	....	......
Chautauqua	*	*
Cherry Creek	....	......
Clymer	....	......
Dunkirk	....	......
Ellicott	1	1
Ellington	....	......
French Creek	....	......
Gerry	....	......
Hanover	2	2
Harmony	....	......
Kiantone	....	......
Mina	....	......
North Harmony	....	......
Poland	2	......
Pomfret	....	......
Portland	....	......
Ripley	....	......
Sheridan	....	......
Stockton	....	......
Villenova	....	......
Consolidated Health Districts		
Sherman — village Sherman — town	....	......
Westfield — village Westfield — town	....	......
Bemus Point — village Ellery — town	....	1
CHEMUNG COUNTY	*81*	*75*
City		
Elmira	71	68
Villages		
Elmira Heights	4	5
Horseheads	3	......
Van Etten	....	......
Wellsburg	....	......
Towns		
Ashland	....	......
Baldwin	....	......
Big Flats	2	1
Catlin	......	....
Chemung	....	......
Elmira	....	......
Erin	....	......
Horseheads	....	......
Southport	1	1
Van Etten	....	......
Veteran	....	......

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* Not reported.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
CHENANGO COUNTY	*13*	*10*
City		
Norwich	11	9
Villages		
Afton	....	......
Greene	....	......
New Berlin	....	......
Oxford	....	1
Towns		
Afton	....	......
Columbus	....	......
Coventry	....	......
Greene	....	......
Guilford	....	......
Lincklaen	....	......
New Berlin	....	......
North Norwich	....	......
Norwich	....	......
Otselic	....	......
Oxford	1	......
Pitcher	....	......
Plymouth	....	......
Smithville	*	*
Consolidated Health Districts		
Bainbridge — village	1	......
Bainbridge — town		
Sherburne — village	....	......
Sherburne — town		
Smyrna — village	....	......
Smyrna — town		
German — town	*	*
McDonough — town		
Pharsalia — town		
Preston — town		
CLINTON COUNTY	*4*	*2*
City		
Plattsburg	2	2
Villages		
Champlain	2	......
Dannemora	....	......
Mooers	....	......
Rouses Point	....	......
Towns		
Altona	....	......
Ausable	....	......
Beekmantown	....	......
Black Brook	....	......
Champlain	....	......
Chazy	....	......
Clinton	*	*
Dannemora	*	*
Ellenburg	....	......
Mooers	....	......
Peru	....	......
Plattsburg	....	......
Saranac	....	......
Schuyler Falls	....	......
COLUMBIA COUNTY	*31*	*31*
City		
Hudson	8	11
COLUMBIA COUNTY — (*Concluded*)		
Villages		
Chatham	2	1
Kinderhook	2	5
Philmont	....	2
Valatie	2	......
Towns		
Ancram	....	......
Austerlitz	....	......
Canaan	....	......
Chatham	....	......
Claverack	2	1
Clermont	....	......
Copake	....	......
Gallatin	....	......
Germantown	1	......
Ghent	....	......
Greenport	....	......
Hillsdale	1	......
Kinderhook	4	1
Livingston	....	....
New Lebanon	....	......
Stockport	6	6
Stuyvesant	3	3
Taghkanic	....	2
CORTLAND COUNTY	*24*	*13*
City		
Cortland	13	8
Villages		
Homer	*	*
McGranville	8	3
Towns		
Cincinnatus	....	.
Cortlandville	2	2
Cuyler	....	....
Freetown	....	...
Hartford	1	......
Homer	*	*
Lapeer	....	......
Preble	....	......
Scott	....	......
Solon	....	......
Taylor	....	....
Truxton	....	......
Virgil	....	......
Willett	....	......
Consolidated Health District		
Marathon — village	....	......
Marathon — town		
DELAWARE COUNTY	*19*	*6*
Villages		
Andes	....	......
Delhi	....	....
Downsville	1	......
Fleischmanns	....	......
Franklin	....	......
Hancock	....	1
Hobart	....	......
Margaretsville	....	......
Stamford	....	......
Walton	9	1

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* Not reported.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	NUMBER OF CERTIFICATES ISSUED TO — Girls
DELAWARE COUNTY— (*Concluded*)		
Towns		
Andes	....	......
Bovina	....	......
Colchester	1	......
Davenport	....	......
Delhi	....	......
Deposit	....	......
Franklin	....	......
Hamden	1	......
Hancock	5	......
Harpersfield	....	......
Kortright	....	......
Masonville	....	......
Meredith	....	......
Middletown	....	......
Roxbury	....	......
Stamford	....	......
Tompkins	....	......
Walton	....	......
Consolidated Health District		
Sidney — village Sidney — town	2	4
DUTCHESS COUNTY	*190*	*127*
Cities		
Beacon	40	28
Poughkeepsie	123	73
Villages		
Fishkill	....	3
Millbrook	1	......
Millerton	....	......
Pawling	....	......
Pleasant Valley	....	......
Wappinger Falls	9	9
Towns		
Amenia	....	1
Beekman	....	......
Clinton	....	......
Dover	....	......
East Fishkill	....	......
Fishkill	9	6
Hyde Park	....	1
La Grange	....	......
Milan	....	......
North East	*	*
Pawling	....	......
Pine Plains	....	......
Pleasant Valley	....	......
Poughkeepsie	7	6
Stamford	....	......
Union Vale	....	......
Wappinger	....	......
Washington	1	......
Consolidated Health Districts		
Red Hook — village Tivoli — village Red Hook — town	....	......
Rhinebeck — village Rhinebeck — town	....	......
ERIE COUNTY	*1886*	*1376*
Cities		
Buffalo	1,691	1,231
Lackawanna	70	89
Tonawanda	21	17
Villages		
Depew	9	9
Kenmore	3	......
Lancaster	2	1
Sloan	16	15
Springville	7	......
Williamsville	3	2
Towns		
Amherst	4	6
Boston	....	......
Cheektowaga	15	16
Clarence	1	......
Colden	....	......
Collins	....	......
Concord	....	......
East Hamburg	1	5
Eden	6	7
Elma	....	......
Grand Island	....	......
Holland	....	2
Lancaster	2	5
Marilla	....	1
Sardinia	....	......
Tonawanda	2	......
Wales	1	1
West Seneca	4	8
Consolidated Health Districts		
Alden — village Alden — town	2	1
East Aurora — village Aurora — town	4	2
Farnham — village Brant — town	3	1
Angola — village Evans — town	2	......
Blasdell — village Hamburg — village Hamburg — town	8	5
Akron — village Newstead — town	7	2
North Collins — village North Collins — town	2	......
ESSEX COUNTY	*5*	*2*
Villages		
Keeseville	1	......
Port Henry	1	2
Ticonderoga	1	......
Westport	....	......
Towns		
Chesterfield	....	......
Crown Point	2	......
Essex	....	......
Jay	....	......
Keene	....	......
Lewis	....	......
Minerva	....	......
Moriah	....	......
Newcomb	....	......
North Hudson	....	......

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* Not reported.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

Locality	Number of Certificates Issued to —	
	Boys	Girls
Essex County—(*Concluded*)		
Schroon	....	......
Ticonderoga	....	......
Westport	....	......
Willsboro	....	......
Wilmington	....	......
Consolidated Health Districts		
Elizabethtown — village Elizabethtown — town	....	......
Lake Placid — village North Elba — town	....	......
Bloomingdale — village St. Armand — town	....	......
Franklin County	*11*	*2*
Villages		
Chateaugay	....	......
Malone	....	......
Tupper Lake	....	......
Towns		
Altamont	....	......
Bangor	....	......
Belmont	....	......
Bombay	....	......
Brandon	....	......
Brighton	1	......
Burke	....	......
Chateaugay	....	......
Constable	....	......
Dickinson	1	......
Duane	....	......
Franklin	*	*
Malone	....	......
Moira	....	......
Santa Clara	....	......
Waverly	4	2
Westville	2	......
Consolidated Health Districts		
Ft. Covington — village Ft. Covington — town	....	......
Saranac Lake — village Harrietstown — town	3	......
Fulton County	*114*	*79*
Cities		
Gloversville	88	50
Johnston	20	21
Village		
Mayfield	....	3
Towns		
Bleecker	....	......
Broadalbin	4	3
Caroga	....	......
Ephratah	....	......
Johnstown	....	1
Mayfield	....	1
Oppenheim	2	......
Perth	....	......
Stratford	....	......
Consolidated Health District		
Northville — village Northampton — town	....	......
Genesee County	*53*	[illegible]
City		
Batavia	34	17
Villages		
Alexander	....	......
Elba	....	......
Towns		
Alabama	....	......
Alexander	....	......
Batavia	1	......
Bethany	1	......
Byron	....	......
Darien	....	1
Elba	....	......
Pavilion	*	*
Stafford	....	......
Consolidated Health Districts		
Berger — village Berger — town	4	......
Le Roy — village Le Roy — town	10	[illegible]
Oakfield — village Oakfield — town	....	......
Corfu — village Pembroke — town	3	......
Greene County	*16*	[illegible]
Villages		
Catskill	6	4
Coxsackie	8	6
Hunter	*	*
Tannersville	....	......
Towns		
Ashland	....	......
Cairo	....	......
Catskill	....	......
Coxsackie	....	......
Greenville	....	......
Halcott	....	......
Hunter	....	......
Jewett	....	......
Lexington	....	......
New Baltimore	....	......
Prattsville	....	......
Windham	....	......
Consolidated Health District		
Athens — village Athens — town	2	1
Hamilton County	....	......
Towns		
Arietta	*	*
Benson	....	......
Hope	....	......
Indian Lake	....	......
Inlet	....	......
Lake Pleasant	*	*
Long Lake	....	......
Morehouse	....	......
Wells	*	*

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* Not reported.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	NUMBER OF CERTIFICATES ISSUED TO — Girls
HERKIMER COUNTY	*93*	*44*
City		
Little Falls	21	11
Villages		
Cold Brook	....	......
Dolgeville	14	15
Herkimer	14	5
Ilion	28	4
Middleville	1	......
Newport	1	1
Old Forge	....	......
Poland	....	......
West Winfield	....	......
Towns		
Columbia	....	......
Danube	....	......
Fairfield	....	......
Herkimer	....	......
Litchfield	....	......
Little Falls	1	......
Manheim	....	......
Newport	....	......
Norway	....	......
Ohio	....	......
Russia	....	......
Salisbury	1	1
Schuyler	....	......
Stark	....	......
Warren	....	......
Webb	2	......
Winfield	....	......
Consolidated Health Districts		
Frankfort — village	9	5
Frankfort — town		
Mohawk — village	....	......
German Flats — village	1	2
JEFFERSON COUNTY	*61*	*30*
City		
Watertown	47	17
Villages		
Adams	....	......
Alexandria Bay	....	......
Bellville	....	......
Black River	....	......
Brownville	....	......
Cape Vincent	2	......
Chaumont	....	......
Clayton	1	7
Dexter	....	......
Glen Park	....	......
Mannsville	....	......
Theresa	4	1
Towns		
Adams	....	......
Alexandria	....	......
Brownville	....	......
Cape Vincent	....	......
Champion	....	......
Clayton	....	......
Le Roy	1	......
Lyme	....	......
Orleans	*	*
Pamelia	....	......
Rodman	....	......
Rutland	1	......
Theresa	2	......
Watertown	....	......
Wilna	....	......
JEFFERSON COUNTY — (*Concluded*)		
Consolidated Health Districts		
Antwerp — village	*	*
Antwerp — town		
W. Carthage — village	3	5
Carthage — town		
Ellisburg — village	....	......
Ellisburg — town		
Henderson — village	....	......
Henderson — town		
Sackett Harbor — village	....	......
Hornsfield — town		
Philadelphia — village	......	....
Philadelphia — town		
Lorraine — town	....	......
Worth — town		
KINGS COUNTY (See under New York City).§		
LEWIS COUNTY	*9*	*2*
Villages		
Constableville	....	......
Copenhagen	....	......
Croghan	1	......
Harrisville	....	......
Lowville	....	......
Lyons Falls	1	......
Port Leyden	....	......
Turin	....	......
Towns		
Croghan	....	1
Denmark	5	......
Diana	1	......
Greig	....	......
Harrisburg	....	......
High Market	....	......
Lewis	....	......
Leyden	....	......
Lowville	....	......
Lyonsdale	....	......
Martinsburg	....	......
Montague	....	......
New Bremen	1	1
Osceola	....	......
Pinckney	....	......
Turin	*	*
Watson	....	......
West Turin	....	......
LIVINGSTON COUNTY	*11*	*11*
Villages		
Avon	....	......
Dansville	*	*
Geneseo	....	......
Leicester	....	......
Lima	1	......
Mt. Morris	3	2
Nunda	....	......
Towns		
Avon	....	......
Conesus	....	......
Geneseo	....	......
Groveland	....	......
Leicester	1	......
Lima	....	......
Mt. Morris	....	......
North Dansville	....	......
Nunda	....	......
Ossian	....	......
Portage	....	......

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* Not reported.
§ At end of table.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	NUMBER OF CERTIFICATES ISSUED TO — Girls
LIVINGSTON COUNTY— (*Concluded*)		
Sparta	....	......
Springwater	2	2
West Sparta	*	*
York	2	3
Consolidated Health Districts		
Caledonia — village	2	4
Caledonia — town		
Livonia — village	....	......
Livonia — town		
MADISON COUNTY	*7*	*1*
City		
Oneida	....	......
Villages		
De Ruyter	....	......
Earlville	....	......
Hamilton	....	......
Morrisville	....	......
Towns		
De Ruyter	....	......
Eaton	....	......
Fenner	....	......
Georgetown	....	......
Hamilton	....	......
Lebanon	....	......
Lincoln	....	......
Nelson	....	......
Smithfield	1	......
Stockbridge	....	......
Consolidated Health Districts		
Brookfield — village	....	......
Brookfield — town		
Casenovia — village	2	......
Casenovia — town		
Canastota — village		
Wampsville — village	1	1
Lenox — town		
Madison — village	....	......
Madison — town		
Chittenango — village	3	......
Sullivan — town		
MONROE COUNTY	*719*	*681*
City		
Rochester	683	642
Villages		
Brockport	6	6
Churchville	....	......
East Rochester	9	11
Fairport	6	4
Hilton	1	2
Honeoye Falls	....	......
Scottsville	....	......
Webster	2	2
Towns		
Brighton	2	1
Chili	....	......
Clarkson	....	......
Gates	1	1
Greece	2	4
Hamlin	....	......
MONROE COUNTY— (*Concluded*)		
Henrietta	*	*
Irondequoit	....	......
Mendon	....	......
Parma	....	......
Penfield	1	2
Perinton	1	2
Riga	1	......
Rush	4	4
Sweden	....	......
Webster	....	......
Wheatland	....	......
Consolidated Health Districts		
Spencerport — village	....	......
Ogden — town		
Pittsford — village	*	*
Pittsford — town		
MONTGOMERY COUNTY	*115*	*99*
City		
Amsterdam	90	73
Villages		
Fonda	....	......
Fort Johnson	2	4
Hagaman	....	......
Towns		
Amsterdam	....	1
Charleston	....	......
Florida	....	......
Mohawk	....	......
Root	....	2
Consolidated Health Districts		
Canajoharie — village	2	4
Canajoharie — town		
Fultonville — village	1	......
Glen — town		
Fort Plain — village	11	8
Menden — town		
Nelliston — village		
Palatine B'dge — village	3	1
Palatine — town		
St. Johnsville — village	6	6
St. Johnsville — town		
NASSAU COUNTY	*112*	*86*
City		
Glen Cove	3	6
Villages		
Bayville	*	*
Cedarhurst	3	2
East Rockaway	*	*
Farmingdale	*	*
Floral Park	6	5
Freeport	9	2
Garden City	1	......
Great Neck Estates	*	*
Hempstead	6	1
Lawrence	....	......
Long Beach	....	......
Lynbrook	4	10
Malverne	....	......

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* Not reported.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
NASSAU COUNTY— (*Concluded*)		
Mineola	3	......
Plandome	....	......
Rockville Center	7	5
Saddle Rock	....	......
Sand's Point	....	......
Sea Cliff	....	......
Towns		
Hempstead	60	57
North Hempstead	10	10
Oyster Bay	*	*
NEW YORK COUNTY (See under New York City).§		
NIAGARA COUNTY	*171*	*140*
Cities		
Lockport	50	30
Niagara Falls	86	66
North Tonawanda	11	18
Villages		
Lewiston	1	......
Middleport	1	6
Wilson	....	......
Youngstown	....	......
Towns		
Cambria	3	......
Hartland	4	1
Lewiston	....	1
Lockport	....	1
Newfane	....	4
Pendleton	1	......
Porter	....	......
Royalton	3	1
Wheatfield	....	4
Wilson	2	2
Consolidated Health Districts		
La Salle — village	7	4
Niagara — town		
Barker — village	2	2
Somerset — town		
ONEIDA COUNTY	*318*	*292*
Cities		
Rome	43	45
Sherrill	1	1
Utica	211	195
Villages		
Holland Patent	....	......
Oriskany	1	1
Prospect	....	......
Remsen	....	......
Trenton	....	......
Waterville	3	......
Whitesboro	9	7
Yorkville	3	8
Towns		
Annsville	*	*
Ava	....	......
Deerfield	....	......
Lee	....	......
Marshall	1	......
Remsen	....	......
ONEIDA COUNTY— (*Concluded*)		
Sangerfield	1	......
Steuben	....	......
Trenton	....	......
Verona	....	......
Vienna	....	......
Western	....	......
Westmoreland	5	......
Whitestown	13	15
Consolidated Health Districts		
Oriskany Falls — village	2	3
Augusta — town		
Boonville — village	....	......
Boonville — town		
Bridgewater — village	2	......
Bridgewater — town		
Camden — village		
Camden — town	1	1
Florence — town		
Forestport — village	1	......
Forestport — town		
Clinton — village	2	3
Kirkland — town		
New Hartford — village	12	8
New Hartford — town		
Clayville — village	5	5
Paris — town		
Oneida Castle — village		
Vernon — village	2	......
Vernon — town		
Floyd — town	....	......
Marcy — town		
ONONDAGA COUNTY	*451*	*279*
City		
Syracuse	381	237
Villages		
Baldwinsville	13	3
East Syracuse	8	2
Eastwood	2	......
Elbridge	....	......
Fayetteville	2	1
Jordan	....	......
Liverpool	2	2
Manlius	2	2
Marcellus	3	5
Minoa	....	......
Skaneateles	....	......
Solvay	13	9
Towns		
Cicero	....	......
Clay	1	......
De Witt	6	3
Elbridge	2	......
Geddes	1	2
Lafayette	....	......
Lysander	1	......
Manlius	....	......
Marcellus	....	2
Onondaga	1	1
Otisco	....	......
Pompey	....	......
Salina	7	4
Skaneateles	3	......
Spafford	....	......
Van Buren	....	......

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* Not reported.

§ At end of table.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	NUMBER OF CERTIFICATES ISSUED TO — Girls
ONONDAGA COUNTY — (*Concluded*)		
Consolidated Health Districts		
Camillus — village Camillus — town	....	4
Fabius — village Fabius — town	3	2
Tully — village Tully — town	....	......
ONTARIO COUNTY	*39*	*31*
Cities		
Canandaigua	10	8
Geneva	13	18
Villages		
Clifton Springs	....	......
East Bloomfield	2	1
Holcomb	*	*
Manchester	4	......
Naples	....	......
Phelps	1	1
Shortsville	....	......
Victor	....	......
Towns		
Bristol	....	......
Canadice	....	......
Canandaigua	1	......
East Bloomfield	*	*
Farmington	1	......
Geneva	....	1
Gorham	....	......
Hopewell	*	*
Manchester	*	*
Naples	....	......
Phelps	1	2
Richmond	2	......
Seneca	....	......
South Bristol	....	......
Victor	4	......
West Bloomfield	....	......
ORANGE COUNTY	*214*	*132*
Cities		
Middletown	55	23
Newburgh	102	59
Port Jervis	18	14
Villages		
Chester	1	1
Cornwall	1	......
Goshen	1	2
Harriman	....	......
Highland Falls	....	1
Monroe	....	......
Montgomery	....	......
Walden	11	8
Warwick	....	......
Washingtonville	....	......
Unionville	....	1
Towns		
Blooming Grove	....	......
Chester	....	......
Cornwall	10	5
Crawford	....	......
Deerpark	1	1
Goshen	1	2
Greenville	....	.
Hamptonburg	...	...
Highlands	..	1
Minisink	..	...
Monroe	...	..
Montgomery	...	..
Mt. Hope	....	....
Newburgh	3	...
New Windsor	1	4
Tuxedo	....	....
Wallkill	2	3
Warwick	5	5
Wawayanda	....	...
Woodbury	2	2
ORLEANS COUNTY	*21*	*26*
Villages		
Albion	2	10
Holley	3	4
Lyndonville	....	....
Medina	4	3
Towns		
Albion	....	..
Barre	....	....
Carlton	1	1
Clarendon	....	1
Gaines	....	....
Kendall	1	2
Murray	7	4
Ridgeway	3	1
Shelby	....	....
Yales	....	....
OSWEGO COUNTY	*101*	*72*
Cities		
Fulton	25	14
Oswego	64	56
Villages		
Altmar	....	....
Lacona	....	1
Mexico	....	...
Sandy Creek	....	....
Towns		
Albion	....	....
Boylston	....	....
Granby	....	....
Mexico	....	....
Minetto	....	....
New Haven	....	...
Orwell	*	*
Oswego	....	...
Palermo	....	....
Redfield	*	*
Sandy Creek	....	...
Scriba	....	....
Volney	....	......
West Monroe	1	...
Williamstown	...	......
Consolidated Health Districts		
Central Sq. — village Hastings — town	1	1
Cleveland — village Constantia — town	3	......

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* Not reported.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	NUMBER OF CERTIFICATES ISSUED TO — Girls
OSWEGO COUNTY— (*Concluded*)		
Hannibal — village	....	......
Hannibal — town		
Parish — village	7	......
Amboy — town		
Parish — town		
Phoenix — village	....	......
Schroeppel — town		
Pulaski — village	*	*
Richland — town		
OTSEGO COUNTY	*18*	*10*
City		
Oneonta	13	10
Villages		
Cherry Valley	1	......
Cooperstown	....	......
Gilbertsville	*	*
Richfield Springs	....	......
Schenevus	....	......
Unadilla	2	......
Towns		
Burlington	....	......
Butternuts	....	......
Cherry Valley	....	......
Decatur	....	......
Edmeston	....	......
Exeter	....	......
Hartwick	1	......
Maryland	....	......
Middlefield	....	......
New Lisbon	....	......
Oneonta	....	......
Otsego	....	......
Pittsfield	....	......
Plainfield	1	......
Richfield	....	......
Roseboom	....	......
Springfield	....	......
Unadilla	....	......
Westford	....	......
Worcester	....	......
Consolidated Health Districts		
Laurens — village	....	......
Laurens — town		
Milford — village	*	*
Milford — town		
Morris — village	....	......
Morris — town		
Otego — village	....	......
Otego — town		
PUTNAM COUNTY	*6*	*6*
Villages		
Brewster	....	1
Cold Spring	2	3
Nelsonville	1	2
Towns		
Carmel	....	......
Kent	....	......
Patterson	....	......
Phillipstown	1	......
Putnam Valley	....	......
Southeast	2	......
QUEENS COUNTY (See under New York City). §		
RENSSELAER COUNTY	*108*	*240*
Cities		
Rensselaer	5	1
Troy	89	221
Villages		
Castleton	*	*
Hoosick Falls	7	8
Nassau	....	......
Valley Falls	....	......
Towns		
Berlin	....	1
Brunswick	1	1
East Greenbush	1	3
Grafton	....	......
Hoosick	....	......
Nassau	....	......
North Greenbush	1	2
Petersburgh	4	2
Pittstown	....	......
Poestenkill	....	1
Sand Lake	*	*
Schodack	*	*
Stephentown	....	......
Consolidated Health Districts		
Schaghticoke — village	*	*
Schaghticoke — town		
RICHMOND COUNTY (See under New York City). §		
ROCKLAND COUNTY	*46*	*36*
Villages		
Grand View	*	*
Haverstraw	1	3
Hillburn	1	1
Nyack	8	5
Piermont	*	*
South Nyack	....	1
Spring Valley	10	10
Suffern	3	6
Upper Nyack	....	......
West Haverstraw	2	......
Towns		
Clarkstown	10	6
Haverstraw	....	......
Orangetown	*	*
Ramapo	6	2
Stony Point	5	2
ST. LAWRENCE COUNTY	*45*	*35*
City		
Ogdensburg	34	29
Villages		
Canton	....	......
Gouverneur	....	......
Hammond	....	......
Hewelton	....	......
Morristown	....	......
Norwood	1	......
Potsdam	2	4
Rensselaer Falls	....	......
Richville	....	......

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* Not reported.

§ At the end of table.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
ST. LAWRENCE COUNTY — (*Concluded*)		
Towns		
Brasher	....	......
Canton	1	......
Clare	....	......
Clifton	....	......
Colton	*	*
De Kalb	....	......
De Peyster	....	......
Fine	....	......
Fowler	....	......
Gouverneur	....	......
Hammond	....	......
Hopkinton	....	......
Lawrence	1	......
Lisbon	....	......
Louisville	....	......
Macomb	....	......
Madrid	1	......
Morristown	....	......
Norfolk	1	1
Oswegatchie	....	......
Parishville	....	......
Piercefield	....	......
Pierrepont	*	*
Pitcairn	....	......
Potsdam	2	1
Rossie	*	*
Russell	2	......
Stockholm	....	......
Consolidated Health Districts		
Edwards — village Edwards — town	....	......
Hermon — village Hermon — town	....	......
Massena — village Massena — town	....	......
Waddington — village Waddington — town	....	......
SARATOGA COUNTY	*62*	*52*
Cities		
Mechanicville	8	9
Saratoga Springs	16	16
Villages		
Ballston Spa	3	1
Galway	....	......
Schuylerville	....	3
Victory Mills	6	1
Towns		
Ballston	....	......
Charlton	....	......
Clifton Park	2	......
Day	1	......
Edinburgh	....	......
Galway	1	1
Greenfield	....	......
Hadley	....	......
Half Moon	....	......
Malta	....	......
Milton	....	1
Northumberland	1	1
Providence	....	......
Saratoga	1	1
Wilton	....	1
SARATOGA COUNTY — (*Concluded*)		
Consolidated Health Districts		
Corinth — village Corinth — town	4	5
So. Glens Falls — village Moreau — town	6	2
Stillwater — village Stillwater — town	4	2
Waterford — village Waterford — town	9	8
SCHENECTADY COUNTY	*293*	*154*
City		
Schenectady	275	140
Village		
Scotia	9	5
Towns		
Duanesburgh	....	....
Glenville	*	*
Niskayuna	3	2
Princetown	....	....
Rotterdam	6	4
SCHOHARIE COUNTY	*5*	*1*
Villages		
Cobleskill	....	1
Esperance	....	....
Middleburgh	....	....
Schoharie	....	....
Sharon Springs	*	*
Towns		
Blenheim	....	....
Broome	....	....
Carlisle	....	....
Cobleskill	....	....
Conesville	....	....
Esperance	....	....
Fulton	....	....
Gilboa	....	....
Jefferson	....	....
Middleburgh	....	....
Schoharie	2	....
Seward	....	....
Sharon	....	....
Summit	....	....
Wright	....	....
Consolidated Health District		
Richmondville — village Richmondville — town	3	....
SCHUYLER COUNTY	*1*	*1*
Villages		
Burdett	....	....
Odessa	....	....
Towns		
Catherine	....	....
Cayuta	....	....
Hector	....	....
Orange	....	1
Reading	*	*
Tyrone	....	....

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* Not reported.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	Girls
SCHUYLER COUNTY—(*Concluded*)		
Consolidated Health Districts		
Watkins — village		
Dix — town	1	......
Montour Falls — village	....	......
Montour — town		
SENECA COUNTY	*4*	*4*
Villages		
Seneca Falls	4	4
Waterloo	*	*
Towns		
Fayette	....	......
Junius	....	......
Lodi	....	......
Romulus	....	......
Seneca Falls	....	......
Tyre	....	......
Varick	....	......
Waterloo	*	*
Consolidated Health Districts		
Interlaken — village	....	......
Covert — town		
Ovid — village	....	......
Ovid — town		
STEUBEN COUNTY	*87*	*67*
Cities		
Corning	6	4
Hornell	61	39
Villages		
Arkport	....	......
Bath	2	1
Canisteo	1	3
Cohocton	3	8
Hammondsport	....	......
Savona	....	......
Wayland	....	......
Woodhull	....	......
Towns		
Bath	2	1
Bradford	....	......
Cameron	....	......
Campbell	....	......
Cansiteo	....	......
Caton	....	......
Cohocton	2	2
Corning	3	1
Dansville	....	......
Fremont	....	......
Greenwood	....	......
Hartsville	....	......
Hornby	....	......
Hornellsville	....	......
Howard	....	1
Jasper	....	......
Lindley	....	......
Pulteney	....	......
Thurston	....	......
Troupsburgh	....	......
Tuscarora	....	......
Urbana	....	......
Wayland	7	5
Wayne	....	......
West Union	....	1
Wheeler	*	*
Woodhull	....	......
STEUBEN COUNTY—(*Concluded*)		
Consolidated Health Districts		
Addison — village		
Addison — town	....	......
Rathbone — town		
Avoca — village	....	......
Avoca — town		
Painted Post — village	....	1
Erwin — town		
Prattsburgh — village	*	*
Prattsburgh — town		
SUFFOLK COUNTY	*48*	*47*
Villages		
Amityville	*	*
Babylon	....	......
Bellport	1	1
Brightwaters	*	*
Greenport	6	4
Northport	....	1
Patchogue	9	2
Sag Harbor	5	6
Saltaire	....	......
Shoreham	....	......
Southampton	....	......
Towns		
Babylon	*	*
Brookhaven	7	10
Easthampton	2	......
Huntington	2	6
Islip	11	15
Riverhead	....	......
Shelter Island	....	......
Smithtown	4	2
Southampton	....	......
Southold	1	......
SULLIVAN COUNTY	*14*	*4*
Villages		
Liberty	....	......
Monticello	1	2
Woodridge	3	......
Wurtsboro	....	......
Towns		
Bethel	*	*
Calicoon	....	......
Cochecton	1	1
Delaware	....	......
Fallsburgh	....	......
Forestburgh	....	......
Fremont	....	......
Highland	....	......
Liberty	....	......
Lumberland	....	......
Mamakating	....	......
Neversink	....	......
Rockland	5	......
Thompson	....	......
Tusten	4	1
TIOGA COUNTY	*27*	*3*
Villages		
Candor	....	......
Owego	7	2
Nichols	....	......
Spencer	5	1
Waverly	9	......

---

* Not reported.

Table 36 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
TIOGA COUNTY—(*Concluded*)		
Towns		
Barton	2	......
Berkshire	....	......
Candor	....	......
Nichols	....	......
Owego	2	......
Richford	....	......
Spencer	....	......
Tioga	....	......
Consolidated Health District		
Newark Valley — village	2	......
Newark Valley — town		
TOMPKINS COUNTY	*33*	*19*
City		
Ithaca	23	12
Villages		
Cayuga Heights	....	......
Groton	1	2
Newfield	....	......
Trumansburg	....	......
Towns		
Caroline	....	......
Danby	1	......
Enfield	....	......
Groton	4	1
Ithaca	....	......
Lansing	2	2
Newfield	....	......
Ulysses	....	......
Consolidated Health Districts		
Dryden — village	2	2
Freeville — village		
Dryden — town		
ULSTER COUNTY	*163*	*107*
City		
Kingston	126	94
Villages		
Ellenville	1	......
Marlborough	....	......
New Paltz	....	......
Pine Hill	1	......
Rosendale	3	1
Towns		
Denning	....	......
Esopus	*	*
Gardiner	....	......
Hardenbergh	....	......
Hurley	....	......
Kingston	....	......
Lloyd	*	*
Marbletown	2	1
Marlborough	4	3
New Paltz	....	......
Olive	*	*
Plattekill	....	......
Rochester	....	......
Rosendale	2	2
Shandaken	....	......
ULSTER COUNTY—(*Concluded*)		
Shawangunk	3	.....
Ulster	11	1
Wawarsing	2	1
Woodstock	....	......
Consolidated Health Districts		
Saugerties — village	8	4
Saugerties — town		
WARREN COUNTY	*20*	*1*
City		
Glens Falls	15	13
Towns		
Bolton	....	.....
Chester	....	.....
Hague	....	......
Horicon	....	....
Johnsburgh	....	.....
Luzerne	....	....
Queensbury	5	1
Stony Creek	....	......
Consolidated Health District		
Lake George — village	*	*
Caldwell — town		
WASHINGTON COUNTY	*15*	*20*
Villages		
Granville	1	8
Greenwich	1	2
Hudson Falls	*	*
Whitehall	1	4
Towns		
Cambridge	....	....
Dresden	1	.....
Easton	*	*
Granville	....	......
Greenwich	*	*
Hampton	....	......
Hartford	....	......
Hebron	....	.....
Jackson	....	.....
Kingsbury	2	1
Putnam	....	1
Whitehall	....	....
Consolidated Health Districts		
Argyle — village	3	2
Argyle — town		
Cambridge — village	1	....
White Creek — town		
Fort Ann — village	2	.....
Fort Ann — town		
Fort Edward — village	2	2
Fort Edward — town		
Salem — village	1	.....
Salem — town		
WAYNE COUNTY	*30*	*33*
Villages		
Clyde	....	3
Macedon	....	......
Newark	8	10
Palmyra	....	1
Red Creek	....	......

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* Not reported.

Table 36— CHILD LABOR CERTIFICATES REPORTED ISSUED IN YEAR ENDED JUNE 30, 1921, EXCLUSIVE OF VACATION CERTIFICATES

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
WAYNE COUNTY—(*Concluded*)		
Savannah	....	1
Sodus	....	......
Walcott	1	......
Towns		
Arcadia	....	......
Butler	2	......
Galen	....	......
Huron	....	......
Macedon	....	......
Marion	1	1
Ontario	3	3
Palmyra	1	3
Rose	....	2
Savannah	....	......
Sodus	5	1
Walworth	....	......
Williamson	4	3
Wolcott	....	......
Consolidated Health District		
Lyons — village Lyons — town	5	5
WESTCHESTER COUNTY	*589*	*441*
Cities		
Mt. Vernon	131	89
New Rochelle	62	51
White Plains	30	24
Yonkers	212	169
Villages		
Ardsley	....	......
Briarcliff Manor	2	......
Bronxville	2	......
Croton-on-Hudson	....	......
Dobbs Ferry	....	1
Elmsford	1	......
Hastings-on-Hudson	12	2
Irvington	3	1
Larchmont	11	......
Mamaroneck	5	8
Mt. Kisco	3	2
North Pelham	4	2
North Tarrytown	10	4
Ossining	....	......
Peekskill	23	31
Pelham	....	......
Pelham Manor	....	......
Pleasantville	1	1
Port Chester	32	27
Rye	2	3
Scarsdale	....	......
Tarrytown	1	......
Tuckahoe	1	......
Towns		
Bedford	1	......
Cortland	6	7
Eastchester	8	3
Greenburgh	2	1
Harrison	8	2
Lewisboro	....	......
Mamaroneck	10	11
Mt. Pleasant	2	......
New Castle	....	......
Northcastle	2	......
North Salem	1	......
Ossining	....	......
Pounderidge	....	......
Rye	1	2
Somers	....	......
Yorktown	....	......

LOCALITY	NUMBER OFS CERTIFICATE ISSUED TO —	
	Boys	Girls
WYOMING COUNTY	*22*	*17*
Villages		
Arcade	....	......
Gainesville	....	......
Perry	12	10
Warsaw	3	4
Towns		
Arcade	....	......
Bennington	1	......
Covington	*	*
Eagle	....	......
Genesee Falls	....	2
Java	....	......
Orangeville	....	......
Perry	....	......
Sheldon	....	......
Warsaw	1	......
Wethersfield	....	......
Consolidated Health Districts		
Attica — village Attica — town	2	1
Castile — village Castile — town	1	......
Pike — village Pike — town	....	......
Silver Springs — village. Gainesville — town	....	......
Wyoming — village Middlebury — town	2	......
YATES COUNTY	....	......
Villages		
Dresden	....	......
Dundee	*	*
Penn Yan	*	*
Rushville	....	......
Towns		
Barrington	....	......
Benton	....	......
Italy	*	*
Jerusalem	....	......
Middlesex	....	......
Milo	....	......
Potter	....	......
Starkey	*	*
Torrey	....	......
TOTAL STATE — Exclusive of New York City	*7,372*	*5,751*

	Total both sexes
TOTAL STATE — Exclusive of New York City	*13,123*
New York City	*44,880*
Bronx Borough	6,049
Brooklyn Borough	17,917
Manhattan Borough	16,255
Queens Borough	3,899
Richmond Borough	760
TOTAL STATE	*58,003*

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* Not reported.

Table 37 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN JULY AND AUGUST, 1920, FOR SUMMER VACATION EMPLOYMENT†

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	Girls
ALBANY COUNTY	*60*	*12*
Cities		
Albany	50	11
Watervliet	2	....
Villages		
Green Island	2	......
Towns		
Colonie	4	.....
Guilderland	2	1
ALLEGANY COUNTY	*2*	......
Town		
Hume	2	......
BRONX COUNTY (See under New York City).§		
BROOME COUNTY	*25*	*9*
City		
Binghamton	16	3
Villages		
Deposit	1	......
Johnson City	8	6
CATTARAUGUS COUNTY	*21*	*1*
City		
Olean	11	......
Villages		
Cattaraugus	3	1
South Dayton	2	......
Town		
Farmersville	3	......
Consolidated Health District		
Little Valley, village Little Valley, town	2	......
CAYUGA COUNTY	*3*	*2*
City		
Auburn	3	2
CHAUTAUQUA COUNTY	*11*	*12*
Cities		
Dunkirk	3	2
Jamestown	2	......
Villages		
Brocton	1	6
Cherry Creek		1
Consolidated Health Districts		
Sherman, village Sherman, town	5	3
CHEMUNG COUNTY	*4*	*3*
City		
Elmira	2	2
Villages		
Elmira Heights	1	1
Wellsburg	1	
CHENANGO COUNTY	*8*	*6*
Village		
Oxford	1	1
Town		
Greene	2	....
Consolidated Health District		
Sherburne, village Sherburne, town	5	5
CLINTON COUNTY		....
COLUMBIA COUNTY	*4*	*3*
City		
Hudson	1	...
Villages		
Philmont	1	....
Valatie	2	3
CORTLAND COUNTY	*1*	...
Town		
Scott	1	....
DELAWARE COUNTY	*3*	....
Village		
Downsville	1	...
Town		
Colchester	1	...
Consolidated Health Districts		
Sidney, village Sidney, town	1	....
DUTCHESS COUNTY	4	4
City		
Poughkeepsie	4	3
Town		
Amenia		1
ERIE COUNTY	*147*	*46*
Cities		
Buffalo	124	40
Lackawanna	8	6
Tonawanda	1	.....
Villages		
Depew	2	.....
Kenmore	5	.....

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† These certificates were issued under authority of section 165-a of the Labor Law, which permits the employment of children, 14 to 16 years of age, in mercantile establishments and business offices during July and August, notwithstanding the fact that the children have not completed the grades in school, necessary for obtaining a regular employment certificate.

§ At end of table.

Table 37 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN JULY AND AUGUST, 1920, FOR SUMMER VACATION EMPLOYMENT †

Locality	Number of Certificates Issued to — Boys	Number of Certificates Issued to — Girls
Erie County—(*Concluded*)		
Towns		
Cheektowaga	2	4
Clarence	1	......
Eden	1	......
Tonawanda	3	3
Essex County	....	......
Franklin County	*4*	*18*
Village		
Tupper Lake	4	18
Fulton County	*3*	......
Cities		
Gloversville	1	......
Johnstown	2	......
Genesee County	*1*	......
Consolidated Health District		
Corfu, village Pembroke, town	1	......
Greene County	*2*	......
Town		
Durham	2	......
Hamilton County	....	......
Herkimer County	*1*	*3*
Village		
Ilion	1	......
Consolidated Health District		
Mohawk, village German Flats, town	....	3
Jefferson County	....	......
Kings County (See under New York City).§		
Lewis County	*5*	*4*
Villages		
Copenhagen	2	......
Port Leyden	....	2
Towns		
Denmark	2	2
Harrisburgh	1	......
Livingston County	*1*	*5*
Village		
Avon	....	5
Town		
Sparta	1	......
Madison County	*8*	*1*
City		
Oneida	4	......
Town		
Smithfield	1	......
Madison County—(*Concluded*)		
Consolidated Health Districts		
Canastota, village Wampsville, village Lenox, town	3	1
Monroe County	*117*	*57*
City		
Rochester	103	50
Villages		
Honeoye Falls	1	......
Scottsville	6	4
Towns		
Clarkson	1	......
Mendon	4	1
Wheatland	2	2
Montgomery County	....	......
Nassau County	*11*	*6*
City		
Glen Cove	5	1
Villages		
Freeport	2	......
Lynbrook	1	......
Rockville Center	2	1
Town		
Hempstead	1	4
New York County (See under New York City).§		
Niagara County	*11*	*3*
Cities		
Lockport	3	......
Niagara Falls	4	2
North Tonawanda	1	1
Consolidated Health Districts		
Barker, village Somerset, town	2	......
La Salle, village Niagara, town	1	......
Oneida County	*25*	*38*
Cities		
Rome	2	3
Utica	8	10
Town		
Trenton	1	......
Consolidated Health Districts		
Camden, village Camden, town	2	10
Florence, town Oneida Castle, village Vernon, village Vernon, town	12	15

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§ At end of table.

Table 37 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN JULY AND AUGUST, 1920, FOR SUMMER VACATION EMPLOYMENT †

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	Girls
ONONDAGA COUNTY	*50*	*29*
City		
Syracuse	36	20
Villages		
E. Syracuse	12	6
Eastwood	....	2
Towns		
De Witt	2	......
Geddes	....	1
ONTARIO COUNTY	*12*	*4*
City		
Geneva	1	1
Village		
Naples	10	1
Towns		
Naples	....	1
Victor	1	......
W. Bloomfield	....	1
ORANGE COUNTY	*21*	*3*
Cities		
Middletown	5	......
Newburgh	12	......
Port Jervis	....	1
Villages		
Cornwall	1	1
Montgomery	1	......
Town		
Cornwall	2	1
ORLEANS COUNTY	*3*	*1*
Village		
Lyndonville	3	......
Town		
Ridgeway	....	1
OSWEGO COUNTY	*1*	*2*
City		
Oswego	1	2
OTSEGO COUNTY	*2*	*1*
Village		
Unadilla	1	......
Town		
Exeter	1	1
PUTNAM COUNTY	....	*1*
Village		
Brewster	....	1
QUEENS COUNTY (See under New York City). §		
RENSSELAER COUNTY	*15*	*6*
City		
Troy	12	2
Villages		
Hoosick Falls	2	3
Nassau	1	1
RICHMOND COUNTY (See under New York City). §		
ROCKLAND COUNTY	....	...
ST LAWRENCE COUNTY	*3*	. .
Town		
Fine	3	. . .
SARATOGA COUNTY	*2*	*1*
City		
Saratoga Springs	1	..
Town		
Wilton	.. .	1
Consolidated Health District		
Stillwater, village	1	
Stillwater, town		
SCHENECTADY COUNTY	*5*	[illegible]
City		
Schenectady	5	[illegible]
SCHOHARIE COUNTY	. ..	.
SCHUYLER COUNTY	*1*	*1*
Village		
Odessa	1	1
SENECA COUNTY	....	..
STEUBEN COUNTY	*2*	[illegible]
City		
Corning	2	[illegible]
SUFFOLK COUNTY	*1*	[illegible]
Villages		
Bellport	....	1
Patchogue	1	...
Town		
Huntington	...	4
SULLIVAN COUNTY	....	....
TIOGA COUNTY	....	.
TOMPKINS COUNTY	*4*	[illegible]
City		
Ithaca	3	[illegible]
Consolidated Health District		
Dryden, village	1	..
Dryden, town		
Freeville, village		
ULSTER COUNTY	*13*	[illegible]
City		
Kingston	4	.
Village		
Ellenville	1	.....
Towns		
Marlborough	3	3
Wawarsing	5	1

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† These certificates were issued under authority of section 165-a of the Labor Law, which permits the employment of children, 14 to 16 years of age, in mercantile establishments and business offices during July and August, notwithstanding the fact that the children have not completed the grades in school, necessary for obtaining a regular employment certificate.

§ At end of table.

Table 37 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN JULY AND AUGUST, 1920, FOR SUMMER VACATION EMPLOYMENT†

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — Boys	NUMBER OF CERTIFICATES ISSUED TO — Girls
WARREN COUNTY	*1*	......
City		
Glens Falls	1	......
WASHINGTON COUNTY	....	......
WAYNE COUNTY	*1*	......
Towns		
Macedon	1	......
WESTCHESTER COUNTY	*82*	*14*
Cities		
Mt. Vernon	17	3
New Rochelle	1	1
White Plains	4	2
Yonkers	42	1
Villages		
Briarcliff Manor	1	......
Dobbs Ferry	1	......
Mamaroneck	1	......
Ossining	4	3
Tarrytown	9	2
Towns		
Bedford	1	......
Greenburgh	....	1
Harrison	....	1
Mamaroneck	1	......
WYOMING COUNTY	*2*	......
Town		
Java	1	......
Consolidated Health District		
Wyoming, village Middlebury, town	1	......
YATES COUNTY	....	*2*
Village		
Rushville	....	2
TOTAL STATE (Exclusive of New York City)	*703*	*330*

	Total both sexes
TOTAL STATE (Exclusive of New York City)	*1,033*
NEW YORK CITY	*3,374*
Bronx Borough	416
Brooklyn Borough	1,091
Manhattan Borough	1,608
Queens Borough	220
Richmond Borough	39
TOTAL STATE	*4,407*

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† These certificate were issued under authority of section 165-a of the Labor Law, which permits the employment of children, 14 to 16 years of age, in mercantile establishments and business offices during July and August, notwithstanding the fact that the children have not completed the grades in school, necessary for obtaining a regular employment certificate.

PART III

REPORT OF DIRECTOR IN CHARGE OF BUREAU OF WORKMEN'S COMPENSATION

REPORT OF DIRECTOR

IN CHARGE OF BUREAU OF WORKMEN'S COMPENSATION

To the Industrial Commissioner:

I submit herewith report of the Bureau of Workmen's Compensation of the New York State Department of Labor for the fiscal year ending June 30, 1921, including a statement of the operations under the amendments to the compensation law effective July 1, 1921, which radically changed the method of handling claims for the period ending December 31, 1921.

Following the reorganization of the Department of Labor and your appointment as The Industrial Commissioner I was appointed director of the Bureau of Workmen's Compensation April 30, 1921, succeeding William C. Archer. The report therefore covers ten months of the bureau under the direction of Mr. Archer for the fiscal year and two months under that of the writer with a summary of the six months' experience since.

The divisions of the bureau have remained practically the same although there has been a material rearrangement of the office force and change in the office system. A report of the work of each division follows.

Claims Division

The claims division is naturally the largest division in the bureau. Its function is to receive the injured employee's notice of injury and later his claim for compensation, the employer's report of injury, the physician's report and other papers which go to make up a case. The claims are all indexed both as to employer and employee and the utmost care is taken to have in the folder all the papers necessary to facilitate prompt handling of the case and ready decision by the referee. When deemed advisable an investigation is made, the claimant and others being visited in their homes or other places. Other detail work of the claims division consists in handling the notices of accidents, indexing same, personal interviews with the claimants, sending out notices of hearings, making up calendars, and otherwise preparing the claims for hearing and determination by the conference examiners, the referees, and the Industrial Board; also clerical work at the hearings, interpretations, and sending out notices of awards.

Statistical information for the number of accidents, number of claims, number of agreements and number of deaths is given in the following table:

TABLE OF ACCIDENTS, CLAIMS, AGREEMENTS AND DEATHS
July 1, 1914, to June 30, 1921

	Number of accidents	Number of claims	Number of agreements	Number of deaths
July 1, 1914, to June 30, 1915	225,391	33,265	8,400	812
July 1, 1915, to June 30, 1916	276,386	18,215	32,646	1,366
July 1, 1916, to June 30, 1917	313,406	22,673	35,889	1,570
July 1, 1917, to June 30, 1918	286,871	21,551	30,647	1,504
July 1, 1918, to June 30, 1919	288,444	21,657	28,448	1,815
July 1, 1919, to June 30, 1920	345,672	*53,512	*12,206	1,236
July 1, 1920, to June 30, 1921	294,469	49,771	5,647	1,177
Totals	2,030,639	220,644	153,883	9,480

TABLE OF ACCIDENTS, CLAIMS, AGREEMENTS AND DEATHS
July 1, 1920, to June 30, 1921

DISTRICTS	Number of accidents	Number of disability claims (other than agreements)	Number of agreements	Number of death claims
1. New York	187,854	27,109	3,500	630
2. Albany	26,218	7,225	152	194
3. Syracuse	22,078	5,414	521	81
4. Rochester	25,615	4,177	679	112
5. Buffalo	32,704	5,846	795	160
Totals	294,469	49,771	5,647	1,177

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* The increase of claims over agreements is due to change in the law.

Medical Division

The work of the medical division is closely correlated with that of the claims division since the physical examinations of claimants are usually made during the hearings at the request of the referee or other presiding officer. In New York City the bureau maintains salaried employees, the doctors being upon a full time basis. At the other offices the doctors are compensated upon a fee basis. The medical examinations are made in a fair and impartial manner. The aim is not only to have the injured employee feel that justice has been accorded him but to have the employer and others interested know that the medical aspects of the claim are given intelligent and conscientious consideration. Whenever requested, medical testimony is reviewed and reports thereon are made to the referees and members of the Industrial Board.

The following table summarizes the physical examinations made by the Medical Division.

CLASSIFICATION OF PHYSICAL EXAMINATIONS, INCLUDING RE-EXAMINATIONS

	July, '20, to June, '21	July, '19, to June, '20*	July, '18, to June, '19	July, '17, to June, '18	July, '16, to June, '17	Oct., '15, to June, '16	July, '14 to Sept., '15
Fractures	8,550	....	4,521	3,630	2,854	2,261	2,089
Contusions	5,989	....	3,165	2,008	2,004	1,077	1,175
Lacerations	3,895	....	2,602	1,852	1,239	989	586
Infections	2,284	....	1,968	1,325	1,815	906	1,534
Amputations	1,676	....	2,298	1,879	944	548	768
Burns	536	....	719	276	154	103	94
Miscellaneous	4,378	....	3,042	1,788	1,680	1,283	1,354
Totals	23,308	....	18,315	12,258	10,190	7,167	7,550

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* Figures for July, 1919, to June, 1920, not available.

In addition, the Medical Division during the year ended June 30, 1921, rendered 114 opinions in death cases and 133 opinions in the interpretation of X-ray plates.

Investigators' Division

This division attends to the personal investigation of claims when necessary. This includes the investigation of disability claims and death claims. The division also does considerable follow-up work to make sure that the injured employee receives not only proper medical treatment but also that degree of rehabilitation which properly comes under section 13 of the law, the intention being to render an efficient after-care service. Investigations of applications for lump sum settlements and in some instances lump sum final adjustments are made by this division and care taken to go thoroughly into the cases before recommendations for such settlements are made.

PERSONAL INVESTIGATIONS — NEW YORK CITY

July 1, 1920, to June 30, 1921

Disability	Death	After-care	Lump sum
357	335	336	149

Few personal investigations are made in the other offices of the bureau but when necessary a member of the regular office force is assigned to that duty.

Hearing Division

The Labor Law provides that The Industrial Commissioner shall appoint as many referees as may be necessary to hear and determine claims for compensation under rules adopted by the Industrial Board and that the decision of the referee on a claim shall be deemed the decision of the Industrial Board unless the Board on its own motion or on application modifies or rescinds such decision.

There are at present nine referees — eight hearing disability claims and one death claims. Hearings are held continuously in New York City and at stated intervals in the up-State cities where the bureau offices are located and in other cities having a considerable industrial population. Expressed in counties, hearings are held in 44 out of the 62 counties of the State. Counties such as Kings, Queens, Bronx, Madison, Richmond and Rensselaer, on account of their close proximity to the district offices of the bureau, and counties such as Hamilton, Lewis, Putnam and Washington, on account of lack of industries, have no hearing places. On the other hand, some counties, on account of large area and scattered industrial activity, have two and three regularly scheduled hearing cities. The aim is to bring the workmen's compensation court as near to the injured employee and his employer as may be consistent with economy of time and money. There is also one examiner of claims who acts as referee a good share of the time and an examiner in each office who holds the conference calendar hearings.

HEARINGS BY COMPENSATION DISTRICTS

July 1, 1920, to June 30, 1921

DISTRICT	Dis-ability	Occupational diseases	Medical	Lump sum	Final adjustment	Death	Total cases on calendar
1. New York	76,697	20	2,353	1,110	7,697	630	88,507
2. Albany	14,754	9	14	30	191	194	15,192
3. Syracuse	10,826	13	58	11	70	81	11,059
4. Rochester	12,047	12	43	52	352	112	12,618
5. Buffalo	12,374	12	12	35	242	227	12,902
Totals	126,698	66	2,480	1,238	8,552	1,244	140,278

During the year, 1,304 motions were made for reopening and rehearing of cases. Of the total number of cases on the calendar, 1,705 were heard before the Commission.

Self-Insurance Division

The principle of self-insurance is well established in this State. Nearly 400 employers have elected to become self-insurers; 59 counties, cities and other political subdivisions operate under it. It is the purpose so to conduct the work of this division that the privilege of self-insurance will be granted only to employers who are financially able to pay the compensation awards which may be made to their injured employees or in case of death, to their beneficiaries, and that, in addition to receiving The Industrial Commissioner's approval, the securities deposited with the Commissioner shall be of such character and in such amount as to further guarantee that injured employees will surely receive their compensation. Total deposits with The Industrial Commissioner at the present time amount to over $8,250,000.

Election to Come Under Act Division

The law requires that a written statement be filed with the Industrial Commissioner by an employer electing compensation when not subject to the compulsory provisions of the law. This notice of election not only declares that the employer accepts the provisions of the Workmen's Compensation Law but states that the payment of compensation has been secured. It is the work of this division to see that these notices of election receive The Industrial Commissioner's approval; to make sure that the compensation is properly secured and to attend to other matters in connection with this class of employers. It also receives employer's notices of insurance, cancellation of policies, etc.

Non-Insured Employers' Division

Every uninsured employer in New York State whose employees are engaged in hazardous employments should secure workmen's compensation insurance to his employees in one of the ways provided by law. Through the work of this division numbers of non-insured employers have taken out workmen's compensation insurance and if the employer refuses to secure the compensation to his employees court proceedings are instituted. If the employer is located in the New York City district and does not respond to the summons served on him a personal investigation is made. Whenever an award to an injured employee is made against a non-insured employer every effort is made to see that such award is collected. If necessary legal action is taken against the employer. The decision of the Court of Appeals in the case of *People* v. *Donnelly,* 232 N. Y. 423, January 24, 1922, sustained the right of The Industrial Commissioner to prosecute employers for not carrying insurance under section 52 of the Compensation Law; also the right to prosecute them for not paying awards to their injured employees.

NON-INSURED EMPLOYERS

July 1, 1920, to June 30, 1921

DISTRICTS	Employers served with summons	Employers securing insurance	Employers not required to insure (not under law)	Legal action take
New York	6,201	4,961	1,240	12
Up-state	1,200	1,096	104	1
Totals	7,401	6,057	1,344	1

In the New York district, 852 awards were made against employers who were uninsured. Prosecutions were begun against 265 of these employers, resulting in twelve imprisonments and the imposition of $4,785 in fines.

Industrial Board

The Labor Law provides for an Industrial Board of three members with power among other things to hear and determine all claims for compensation. Certain matters may come directly before the Board, as original hearings, questions involving public policy, questions of jurisdiction and questions of like importance. The Board hears all motions for rehearing, or for opening defaulted cases, all cases where application is made to it for review of a referee's decision, and also cases which are to be tried for the first time when it so determines.

It is a part of the function of the bureau to prepare the claims for hearing before the Industrial Board, send out the notices of hearings, furnish the calendar clerks and notify the parties of the decisions and awards of the board. The Board holds hearings in the New York City district three times a week, also frequent special hearings, and hearings in the cities of the up-State districts as occasion requires.

Six Months' Experience Under the New Amendments

Six months have elapsed since the new amendments to the Workmen's Compensation Law went into effect. These months have been strenuous for everyone in any way interested in carrying out the provisions of the Compensation Law. New forms have had to be drafted, new procedure outlined, new methods for handling claims adopted and the law has had to be put into practical operation.

The amendments provide that the compensation shall be paid in like manner as wages, promptly as it accrues, directly to the person entitled, and without waiting for an award. They have revolutionized the method of handling claims. Previously the claimant had to quit work, appear at the hearings, lose pay and take up not only his own and his employer's time but the time of the referee, calendar clerk, hearing stenographer and other employees of the bureau. Sometimes, after repeated adjournment of hearings because of the claimant's non-attendance, he would be brought in only to find that he had gone back to work and that his case should have been closed. Never was the maxim truer, "To delay Justice is to deny Justice". Now this has happily all been changed. The claimant receives his "Notice of Opportunity to be Heard", with detailed statement calculating his compensation, full explanation of his rights and invitation to present himself at the hearing or respond in writing if all is not satisfactory. More than 50 per cent of the claimants do not appear but continue at work. Yet the utmost care is taken to procure their attendance when necessary.

If the employer intends to controvert the claim he must file notice on or before the twenty-fifth day of disability, copy of which is immediately sent to the claimant. Over 43 per cent of the controverted cases involve only minor questions and are quickly disposed of at a conference or trial hearing, leaving relatively only a small number of the total claims filed that involve real controversy. Every effort is made by the Claims Division of the bureau to prepare the controverted cases for early placing on the calendars and the referees are impressed with the importance of prompt decision and award. Such action is facilitated by reason of the fewer cases requiring their adjudication. The new method permits more careful consideration of the individual case and devotion of more time to the aggregate of cases coming before them.

Though the amendments to the law have been in effect only a few months gratifying results are shown. Fifty-six per cent of all injured employees receive their compensation without resort to a hearing. Nineteen per cent of the cases are settled with little difficulty. In only twenty-five per cent is there controversy going to the merits of the claim. While the results so far obtained are most satisfactory, it is believed that as the employer and claimant become more familiar with the operation of the law and a closer personal contact is established even nearer approach to the ideal in the minds of those responsible for the amendments will be reached.

Meetings

(a) Claim examiners. A meeting of the claim examiners in the New York office is held every Monday morning at which matters pertaining to claims are discussed and decisions of the courts reviewed.

(b) Heads of groups. The Claims Division in the New York office is divided into groups; the heads of these groups hold frequent meetings to consider matters relating to the details of office management and the welfare of the office force.

(c) Referees' meetings. The referees attached to the New York office hold meetings from time to time to consider matters relating to the work performed by them.

(d) Other meetings. Meetings of the employees connected with the other divisions of the New York office are held at intervals and general meetings of all employees are occasionally held.

(e) Meetings of all the referees in the State and of the examiners in charge of the several offices are held when deemed necessary.

Districts

For the purpose of administering the Workmen's Compensation Law the State is divided into five districts. The counties included in these districts, with the location of the office of the Bureau of Workmen's Compensation in each of the districts, are as follows:

District No. 1.— New York, Bronx, Kings, Queens, Richmond. Nassau, Suffolk, Rockland and Westchester counties. Headquarters, New York city.

District No. 2.—Putnam, Orange, Sullivan, Dutchess, Ulster. Delaware, Greene, Columbia, Warren, Hamilton, Franklin, Rensselaer, Albany, Schoharie, Otsego, Schenectady, Montgomery, Washington, Saratoga, Fulton, Essex, Clinton and St. Lawrence counties. Headquarters, Albany, New York.

District No. 3.— Jefferson, Oswego, Onondaga, Cayuga, Herkimer, Cortland, Lewis, Oneida, Madison, Chenango, Broome and Tioga counties. Headquarters, Syracuse, New York.

District No. 4.— Monroe, Wayne, Ontario, Seneca, Chemung. Livingston, Steuben, Schuyler, Yates, Tompkins, Orleans, Genesee and Wyoming counties. Headquarters, Rochester, New York.

District No. 5.— Chautauqua, Niagara, Erie, Cattaraugus and Allegany counties. Headquarters, Buffalo, New York.

Permanent Total Disability — Special Fund

An injured employee sometimes loses a hand, an arm, a foot, a leg or an eye when previously he had lost another member or organ which results in permanent total disability although the immediate accident of itself would have caused only permanent partial disability. The special fund created by subdivision 7 of section 15 of the Compensation Law which requires employers in every death case where there are no dependents to pay $100 to the State Treasurer is used for these cases. From this special fund the injured employee is entitled to 66 2/3 per cent of his average weekly wage for the remainder of his life, as special additional compensation after cessation of payments for the permanent partial disability. This provision of the law is most humane and beneficial in its results. The claims examiners and referees are careful to see that such cases are again put on the calendar and awards made for permanent total disability with compensation directed to be paid out of the special fund. Sixteen persons are now receiving this additional compensation. From calculations made by the actuary of the department, however, the payments by employers or their insurance carriers to this special fund must be increased if it is to remain solvent.

Vocational Rehabilitation — Special Fund

An employee totally or partially incapacitated by injury for a remunerative occupation, if given a vocational education, may be able to return to industry and earn a livelihood. An injured employee receiving a vocational education through the Bureau of Rehabilitation of the Department of Education is entitled to additional compensation for his maintenance not exceeding ten dollars per week. Subdivision 8 of section 15 of the Workmen's Compensation Law provides a special fund for this purpose by requiring employers to pay to the State Treasurer $900 in every death case where there are no dependents. Industrial rehabilitation is most important. The bureau is reporting to the Rehabilitation Commission of which the industrial commissioner is a member the names of injured employees who need rehabilitation and is cooperating in other ways with the Bureau of Rehabilitation of the Department of Education.

Occupational Diseases

The Workmen's Compensation Law states that compensation shall be payable for injuries sustained or death incurred by employees engaged in certain enumerated hazardous employments. It also defines "injury" to mean "only accidental injuries arising out of and in the course of employment and such disease or infection as may naturally and unavoidably result therefrom." A definition of the term "accident" approved by the Appellate Division of the Supreme Court, Third Department, and the Court of Appeals states that it is "an unlooked for or untoward event which is not expected or designed." It is further well agreed that "accident" must be due to some particular occurrence at some particular time. Under the New York law, therefore, certain diseases, such tuberculosis, have in particular cases been found to result from accidental injuries, while certain other diseases, such as cataract of the eye due to glare in the glass industry, have not been found to so result.

Accordingly the Legislature amended the Workmen's Compensation Law in 1920 by setting up an entirely new Article (2-A) with a procedure to some extent different from that provided for disability and death claims resulting from accidental injuries. A list of 23 diseases is given which are deemed occupational diseases. The records show that comparatively few occupational disease claims have been filed under this new article. Accurate statistics are not available but it is believed that a majority of all occupational diseases under Article 2-A are due to lead poisoning (Group 2) and a majority of the remainder to poisoning by nitro and amido derivatives (Group 7) or to poisoning by nitrous fumes (Group 9). A number of occupational disease cases are disallowed because they do not come under the law. There were 66 occupational disease cases appearing on the calendars for the fiscal year July 1, 1920, to June 30, 1921. The amount of compensation awarded in these cases was slight in comparison with the total compensation awarded, but a gradual increase in the number of claims can be seen. As the workmen become more familiar with the provisions relating to occupational diseases this increase will doubtless be more pronounced. The cost, however, of the inclusion of the occupational disease article in the compensation law is slight. A more simple procedure and its extension to cover a number of other well known industrial diseases is desirable.

Maritime and Admiralty Cases

Immediately upon the going into effect of the New York Workmen's Compensation Law, July 1, 1914, the question was raised as to whether or not Groups 8 and 10 of section 2 were constitutional in view of section 2, Article III, of the U. S. Constitution which states that the judicial power of the United States shall extend "to all cases of admiralty and maritime jurisdiction." The U. S. Supreme Court decided they were not constitutional in the case of *Southern Pacific Co.* v. *Jensen,* 244 U. S. 205, May 21, 1917. Congress thereupon amended the Federal Judicial Code (see section 24 and 256) to " save to claimants the rights and remedies under the workmen's compensation law of any state." These amendments made October 6, 1917 gave to the Federal District Courts and to the Industrial Boards and Commissions concurrent jurisdiction over industrial accidents occuring in admiralty. The U. S. Supreme Court declared these amendments unconstitutional May 17, 1920, in the case of *Knickerbocker Ice Co.* v. *Stewart,* 253 U. S. 149, holding "that the amendment to the Judicial Code did not confer jurisdiction of maritime injuries upon the Commission since Congress alone had the power to legislate in respect to matters coming within the admiralty and maritime jurisdiction and that it could not delegate such legislative power to the states."

Thus we have seen the two attempts of the New York industrial commission supported by the New York courts to give to longshoremen and repair men on docks the rights and benefits of our

Workmen's Compensation Law nullified by the United States Supreme Court in a decision based on that elusive term, a "marine contract," which Hughes in his standard work on admiralty states has never been intelligently defined and concerning which U. S. Justice Holmes says "the precise scope of admiralty jurisdiction is not a matter of obvious principle or very accurate history."

It is gratifying to note that the recent trend of the New York courts is towards declaring that longshore work and repair work alone done on land is not of a maritime nature and that consequently injuries sustained in such work come under the Workmen's Compensation Law. (See among others the decision of the Appellate Division, January 17, 1922, in the case of *Larsen* v. *Newburgh Shipyards,* in which the courts says "In determining whether or not a contract is maritime in its nature the true test is the subject matter of the contract — the nature and character of the work to be done;" also the decision of Justice Wasservogel, December 9, 1921, dismissing complaint brought under common law in the case of *Esselborne* v. *United Marine Contracting Corporation,* on the ground that the work on a pier of supplying compressed air to a boat is not of a maritime nature.)

Furthermore the Department of Labor has not acceded to the view that injuries occurring on land come within admiralty jurisdiction and has, through the Attorney General, appealed the case of *Insana* v. *Nordenholt Corporation,* 232 N. Y. Rep. 507, which held that a longshoreman working on a dock was employed under maritime contract and not entitled to compensation, to the United States Supreme Court.

In the recent case of *Western Fuel Co.* v. *Garcia* the United States Supreme Court pointed out that, as to certain local matters regulation of which would work no material prejudice to the general maritime law, the rules of the latter might be modified or supplemented by state statutes. *The Grant Smith Porter Ship Co.* v. *Rhode*, handed down by the United States Supreme Court, January 3, 1922, recognizes the jurisdiction of state workmen's compensation laws under certain conditions and the Johnson-Mills bill, passed by the United States Senate, June 10, 1921, and recently favorably reported by the House judiciary committee, is an attempt to give to a substantial class of our citizens the benefit of workmen's compensation.

The full power of the Department of Labor and the State of New York should be exerted to bring within the scope of the workmen's compensation law the many thousands of longshoremen and men working on docks in our State.

Amendments

Suggested amendments to the Workmen's Compensation Law which would clarify the meaning or language of some sections, increase certain benefits, give unlimited medical service and provide a more severe penalty for failure to secure compensation, have previously been submitted to you and will not be repeated here.

Growth of Workmen's Compensation

The purpose of the Workmen's Compensation Law is to grant relief to injured workmen and their dependents. Such laws recognize that industrial accidents are part of the hazard of modern industry and that the financial burden should not fall wholly upon the injured employees but in large part on the employer and be by him distributed as part of the cost of production to the general public.

During the seven year period that the Workmen's Compensation Law has been in force in this State the number of accidents per year has increased from 225,391 to 294,469; the disability claims from 41,665 to 56,118 and the death claims from 812 to 1,177. The workmen's compensation premiums paid to companies have increased from $13,004,033.28 in 1915 to $43,244,867.00 in 1920.

Under the New York Workmen's Compensation Law only a small percentage of financial loss accrues to the injured employee although most unfortunately the pain and suffering that go with industrial accidents are ever present. The compensation is based on the weekly wages lost by the claimant, not on the pain and suffering. As stated above, employers in New York State paid out for workmen's compensation in the form of premiums to insurance companies in the year 1920 $43,244,867.00. To this sum should be added the amount paid out by the self-insurers for claims for compensation, medical benefits and the expense necessary to handle same, estimated at $3,092,728.14 making a total of $46,237,595.14.

Workmen's compensation laws have been of incalculable benefit to society and there is no one today who would return to the old employers' liability system. All recognize the beneficent and humanitarian purposes sought by the enactment of workmen's compensation laws. Their development is steadfastly along the lines of wider coverage and increased benefits.

Conclusion

May I express my sincere appreciation of your sympathetic attitude toward bureau problems brought to your attention. Your encouragement and sound counsel have been most helpful in solving difficulties which have at times presented themselves.

I wish also to record my appreciation of the loyal and intelligent co-operation which I have received from the referees, chiefs of divisions, office managers, heads of groups and all employees connected with the bureau. Their desire and willingness to co-operate have made possible a greater degree of efficiency with a less number of employees.

It is the purpose to increase the effectiveness of the bureau and to render an even greater degree of service to all those with whom it is brought in contract to the end that fairness and justice shall always prevail in the administration of the Workmen's Compensation Law in this State.

STANLEY L. OTIS,
Director, Bureau of Workmen's Compensation.

PART IV

REPORT OF STATE INSURANCE FUND

REPORT OF MANAGER

IN CHARGE OF STATE INSURANCE FUND

To the Industrial Commissioner:

In accordance with previous practice and because it is customary with compensation insurance carriers, this report for 1921 is for the calendar year.

NUMBER OF POLICY HOLDERS AND PREMIUMS IN FORCE

The number of policy holders in the Fund on December 31, 1920, was 9,305. During the year 1921 a total of 2,691 policies were issued while 1,240 were cancelled, making a net gain for the year of 1,451 policies, and resulting in a total of 10,756 policies in force at the close of the year.

Premiums in force at the end of 1920 amounted to $1,023,927. During 1921 the amount of premiums written or renewed was $3,100,115, the amount of expirations and cancellations was $2,951,861, making a net increase in premiums in force of $148,254 to a total of $1,172,181.

The following is a comparison with former years for policies and premiums in force:

	In Force on December 31	
Year	Policies	Premiums
1914	7,125	$689,765
1915	8,507	674,974
1916	9,966	797,743
1917	9,984	810,577
1918	8,782	940,903
1919	8,402	891,476
1920	9,305	1,023,927
1921	10,756	1,172,181

It will be seen that the number of policies in force at the end of 1921 was the largest in the history of the Fund. With respect to premiums in force it should be noted that the 1921 (and 1920) figures are not comparable with those of previous years owing to a considerable proportion of policies having been changed to an annual basis in the last two years as a result of the policy inaugurated in 1920 of changing from a six months to an annual policy period in the Fund.

The extent to which the change to an annual basis has been carried out is shown by the following comparison of premiums in force on an annual and semi-annual basis at the end of the year:

Year	PREMIUMS IN FORCE Annual	 Semi-Annual	 Total
1919	....	891,476	891,476
1920	433,209	589,718	1,023,927
1921	672,391	499,790	1,172,181

If, for comparative purposes, the figures for the last two years on an annual basis be taken at one-half as the equivalent semi-annual basis (which probably, however, understates the case on a semi-annual basis), the result would still show a substantial increase of premiums in force in 1921, the figures being, on such a semi-annual basis, $806,323 for the end of 1920 and $835,986 for 1921.

PREMIUMS WRITTEN

Total premiums written in 1921 amounted to $3,100,115 as compared with $3,798,305 for 1920. This decrease reflects the decrease in payrolls owing to the industrial depression which set in late in 1920 which affected the volume of premiums of all carriers. The Labor Market Bulletin published by the Department gives striking evidence of the shrinkage in payrolls in its figures for total wages paid in factories in the State. The monthly index of such wages for 1920 fluctuated between 277 and 226 with an average of 263, while in 1921 the fluctuation was between 204 and 177 with an average of 188.

The following table gives a comparison of written premiums in the Fund since its establishment:

Year	Total	Year	Total
1914	$689,765	1918	$3,332,842
1915	1,293,613	1919	3,409,962
1916	1,892,561	1920	3,798,305
1917	2,694,851	1921	3,100,115

FINANCIAL CONDITION AT CLOSE OF YEAR

Following is the balance sheet of the Fund as of December 31, 1921:

Assets:	
Bonds at market value	$6,538,466
Cash	469,658
Due from policyholders	860,202
Accrued interest	67,182
Miscellaneous	1,000
	$7,936,508
Liabilities:	
Reserve for unpaid losses (compensation and medical)	$5,058,795
Reserve for investigation and settlement of unpaid claims	374,952

Reserve for unearned premium	365,308
Reserve for administrative expenses incurred	554,980
	$6,354,035
Surplus	$1,582,473
Set aside for catastrophe	$856,587
Set aside for dividends for last half of 1921	350,000
Unassigned	375,886

As pointed out in last year's report the above understates assets in that premiums earned within the year but not disclosed by audits until after December 31 are not included. However, without such potential assets, the statement reveals a strong financial condition at the close of the year. Surplus for catastrophe, for which contributions from policy holders have not been required since June 30, 1920, increased during the year by addition of its interest earnings from $802,424 to $856,587. After setting aside ample funds for payment of dividends on the business of the last half of the year, such dividends not being determinable until some time after the close of the year, there was still unassigned surplus of $375,886. Total surplus at the close of the year after setting aside reserves for all possible contingencies was the largest in the history of the Fund being $1,582,473 as compared with $1,422,186 at the close of 1920 which was the next largest surplus at the close of any year. Comparison with former years is as follows:

Year	Surplus at close	Year	Surplus at close
1914	$250,162	1918	817,210
1915	377,399	1919	848,215
1916	253,179	1920	1,422,186
1917	398,682	1921	1,582,473

RATES AND DIVIDENDS

Premium rates in 1921 were continued as in the preceding year at 15 per cent less than the rates of other carriers.

The amount of dividends declared in 1921 was the largest in the Fund's entire history, no less than $656,373 being so distributed to policy holders. The following table shows the amount of dividends credited in each year:

Year	Amount	Year	Amount
1915	$347,541	1919	$611,233
1916	240,085	1920	347,279
1917	150,421	1921	656,373
1918	229,956		
			$2,582,888

Earned premiums in the State Fund to the close of 1921 amounted to $20,025,881, so that dividends credited have amounted to 13 per cent of premiums. The dividends thus returned represent a reduction of cost to policy holders in the Fund in addition to lower premium rates than those charged by private carriers. The Fund's rates have been below those of other carriers by the following differentials:

Period	Per cent reduction
July 1, 1914 to December 31, 1914	8⅓
January 1, 1915 to June 30, 1917	20
July 1, 1917 to June 30, 1920	14½
Since June 30, 1920	15

CONSOLIDATION OF "GENERAL" GROUPS

An important change in the plan of groups for accounting and dividend purposes was effected in 1921. Such groups had theretofore comprised two classes, one known as general groups and the other as special groups. The general groups, few in number, represented very broad and general classes of industry such as manufacturing, building, mining and quarrying, etc. The special groups, comprising a larger number, were confined to individual industries or classifications including in some cases a single establishment or firm as a group where such was of a size and character to constitute the only one of its class or kind in the Fund and one sufficiently large to warrant treatment as a separate group. The change made in 1921 was to combine the general groups into one. This consolidation, as explained when it was submitted for and received your approval, was proposed only after due consideration from the point of view of the interests of the Fund as a whole and of the policyholders in those groups. It is believed to be entirely sound and desirable from every point of view, one important advantage of it in the direction of efficiency and economy being considerable simplification of accounting and actuarial work.

The one general group, which was established as of July 1, 1921, comprises about three quarters of the State Fund coverage as measured by premiums, the other one fourth remaining in special or trade groups as before.

NET COST OF INSURANCE IN THE GENERAL GROUP

Dividends credited in the general group were at the rate of 15 per cent in 1921, that being the rate both in the several general groups for the first half of the year and in the one general group for the last half. With premium rates in the Fund at 85 per cent of manual rates, this dividend rate reduced the cost to the employer in the general group of the Fund to the equivalent of 72¼ per cent of manual rates.

REDUCTION IN COST OF COMPENSATION INSURANCE THROUGH THE STATE FUND

All will doubtless agree that one of the fundamental purposes of a State Insurance Fund, particularly a competitive fund, is to act as a regulator of the cost of compensation insurance in the direction of keeping such cost down. Naturally the chief test of how far it is fulfilling this function is to be found in a comparison of cost to the employer insured in the Fund as compared with cost to the employer insured with a private carrier. The following comparison for 1921, therefore, is highly significant.

As above indicated, about three quarters of the insurance in the State Fund, measured by premiums, is in the general group. Of the compensation insurance of private carriers in this State, three fourths is in the so-called nonparticipating stock companies. In these companies premiums are charged at full manual rates and no dividends are paid to policyholders and the cost to the employer is, therefore, 100 per cent of manual rates.* This is to be compared with the cost of 72¼ per cent of manual rates * in the general group of the Fund.

This is believed to be the most significant comparison that can be made between State Fund and private insurance results in 1921. In some of the special groups in the Fund the net cost was considerably less than in the general group but these are confined to a comparatively few industries and so would not afford so good a comparison for compensation insurance in general. There is a similar element which would have to be taken account of in comparison with private mutual company insurance in that to a considerable extent the latter is likely to represent selected risks.†

On the other hand the general group in the Fund and stock insurance taken generally, by reason of more general representation of all classes of risks, are both more comparable and more representative of compensation insurance in general.

This, then, is how the comparison stands. The cost to employers in the Fund as compared with cost to employers insured with non-participating private companies was as 72¼ to 100 in terms of percentage of manual rates. In other words, the State Fund reduced the cost to its insured employers 27¾ per cent below the cost to employers of three-quarters of the private company insurance in the State.

LEGISLATIVE RECOMMENDATIONS

Needed Amendments of Administrative Law. The re-codification of the Compensation Law which at the close of the year was being undertaken by a special committee of the Legislature, affords an important opportunity for revision of Article 5 of that law, which governs the administration of the State Insurance Fund. In accordance with the request of that committee and your instructions, a revision of that article was prepared for recommendation to the committee. It is highly encouraging that this proposed revision as finally approved and recommended by you has been incorporated in the bill which has been reported to the Legislature by the committee and that the latter in its report just published urges the enactment of the proposed changes concerning the State Fund. As the committee's report sets forth the reasons for the proposed changes it is not necessary to review them here. It is very much to be hoped and urged that the proposed revision shall be enacted. While not undertaking changes in present principles or policy with regard to the Fund, the proposed changes would realize important improvements, long recognized as needed, in administrative conditions under the present general State Fund policy.

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* By manual rates is meant such rates whether affected by schedule or experience rating or not. Any modifications of manual rates to individual employers by schedule or experience rating are the same for all carriers including the Fund and hence are immaterial in this comparison.

† To the best of the writer's knowledge the net cost in 1921 in no mutual company was as low as in the general group of the State Fund, and as indicated above some of the special groups in the Fund were much below the general group in net cost.

Legislation Concerning Maritime Employment. Attention was called in the annual report for 1920 to the situation with regard to maritime employments. It is noted here again both because of the general compensation problem which it presents for which whatever solution or alleviation by state legislation may be possible should by all means be urged in the interests of the great numbers of wage earners in this state who have most unfortunately been deprived of compensation in connection with it, and because of the special interest which attaches to it and to any remedy, from the point of view of the State Fund which is especially affected by it.

There are, fortunately, two measures of legislative relief which have now been proposed. One is the Johnson-Mills bill in Congress to restore longshoremen and vessel repairmen to compensation rights under state laws. This bill has already passed the Senate and has been favorably reported out of committee in the House. This measure would afford the fullest remedy of existing difficulties. The other measure is recommended by the special legislative committee (known as the Knight Committee) which is revising the Compensation Law and would permit the parties in interest to elect to pay and accept compensation in lieu of rights under admiralty law. Some such provision seems to be as far as state legislation can go in view of the constitutional question involved.

From the point of view of the State Fund both measures are urged for passage. The proposed state legislation would seem to offer certain relief for one particular class of employees whose situation is at present peculiarly unjust. These are employees of the state engaged in the operation of the barge canal. Their occupation is maritime in character under the decision of the U. S. Supreme Court that the barge canal is subject to admiralty jurisdiction. Consequently the State Fund, which provides compensation insurance for state employees, cannot legally pay it to barge canal employees because it has been held that the Fund can legally pay compensation only as provided by the Compensation Law. This leaves the barge canal employees, whose employment is maritime, with no remedy whatever when injured, because the state, which is their employer, cannot be sued and hence they cannot recover damages under admiralty law. By enabling the State Fund to pay compensation in such cases, which the proposed amendment will do, they can be taken care of without difficulty, because no question of the willingness of the employee to waive admiralty rights can arise in these cases.

Compensation Insurance for State Employees. A situation has developed, with reference to the State's compensation insurance in the Fund for the benefit of State employees which requires legislative attention.

The Legislature annually includes in the general appropriation act an item for " State compensation insurance." Round amounts for this item of $100,000 for several years prior to the fiscal year 1920–21, and of $125,000 for the last two years, were appropriated. Originally, it appears that the amount was fixed as representing approximately the proper insurance premium at the regular rates for the State employees covered by the Compensation Law. But as the result of amendments or court decisions enlarging the jurisdiction of that law as respects occupations of State employees, especially in more recent years, the amount so appropriated has ceased to even approximate proper premiums on the insurance basis, that is, sufficient to pay all compensation on all compensable accidents occurring during the year. A recent examination of this matter has disclosed the fact that on June 30, 1921, if the premium due be reckoned as equal only to losses incurred plus catastrophe charge and administrative expense charge, the State was in arrears for premiums by over $100,000.* No one doubts, of course, the State's ability and intention to supply ultimately the full amount necessary to pay all losses to maturity. But it is hardly sound business method nor just to claimants or the taxpayers to leave the matter in the indefinite status where it now is, not to mention a certain incongruity in the State's practically failing (even though it be, as it is, only a matter of inadvertence) to conform to the requirements as to insurance which it has set up for private employers.

Attention should be called to an alternative course to the State's providing compensation for State employees by full insurance premium payment annually. This would be for the State to virtually make itself a self-insurer with the handling of claims done by the State Insurance Fund. The latter would be obviously the logical and most economical agency for such a procedure. Under this plan it would be necessary for the State to appropriate each year only sufficient funds to cover compensation and medical payments plus administrative expenses for the year. Were the appropriations made for the period up to June 30, 1921, to be considered as having been on this basis,* the total would show a surplus above total payments and administrative expenses to that date of over $200,000. Under such a plan this surplus would make it possible to omit any appropriation for one year.

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* Incidentally it may be noted, that this constitutes a very substantial item of uncollected premium which must be so carried in the Fund's financial statement.

In weighing this plan consideration would have to be given to a question of justice as between taxpayers in different years. Theoretically, it would be more equitable to charge upon the taxpayers of each year the total cost of the accidents to State employees occurring in that year. However, it is hardly necessary to go into the merits of the two alternatives at this time. The point it is desired to emphasize now is that at present there is no defined policy on the subject. Certainly as a matter of justice to its employees and consistency in view of its requirements of private employers, the Legislature should clearly define the State's intention in the matter and make its appropriations accordingly.

L. W. HATCH,
Manager.

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* Which as a matter of fact was not done as indicated by the wording of the item in the appropriation acts which is for "State compensation insurance."

PART V

REPORT OF BUREAU OF INDUSTRIAL RELATIONS

REPORT OF DIRECTOR

IN CHARGE OF THE BUREAU OF INDUSTRIAL RELATIONS

To the Industrial Commissioner:

While the writer is hereby transmitting an annual report from July 1, 1920, to June 30, 1921, of the work accomplished by the various divisions making up the Bureau of Industrial Relations, as now constituted by General Order No. 21, however, as I have not had the benefit of personal knowledge of this work, not then being connected with the Department of Labor, the report is confined to the statistical information for the year, and the reports of the chiefs of the divisions who were at the head of the work during the period reported, together with some suggestions for the further proper development and progress of the work covered by the bureau. You have already received the reports of the Division of Mediation and Arbitration, of the Division of Employment, and of the Division of Aliens. Relative to the work of enforcement of the eight hour and prevailing rate of wages laws there is herewith transmitted for the first time a statistical tabulation showing the work accomplished during the year.

DIVISION OF MEDIATION AND ARBITRATION

All building trades generally throughout the State went out on strike about April 1, 1921, against any reduction in wages and in some cases asking for increased wages, which was really caused by the fact that for at least twenty-five years any change in wages within the State of New York in these trades meant an increase in wages and better working conditions; therefore, a general decrease in wages from the abnormal prices paid during the war, was a new condition to the workers, especially the younger class of workers who did not remember days prior to 1896 and against this situation there was a ready protest which was somewhat augmented by advices not to accept lower wages, by prominent men in trade unions generally. As shown by the attached schedules, the building strikes generally speaking are now settled at a wage decrease of from ten to fifteen per cent, after from three to four months' continuance of strike, which doubtless was extended somewhat on account of building industries being slack and a hesitancy in undertaking large enterprises on account of the high cost of materials as well as labor. Contractors not having many jobs ahead were not particularly anxious about adjusting strikes and so having their men upon their hands without work at which to place them continuously and a general feeling existed that they could keep the personnel of their employees intact better by a continuance of the strike than by a settlement and no work.

Commencing with April 15, 1921, at Binghamton and then generally on May 2, 1921, throughout the State, the printers struck for a forty-four-hour week and in some cases wages were involved, but generally speaking the reduction of hours to forty-four working hours per week was the question involved and it was a strike of job printers although affecting newspaper plants where both job printing and newspaper work were carried on.

This strike was not alone a New York State situation; it was an international strike for the forty-four-hour week agreed to about two years before it was put in effect and was actually a hang-over that had been delayed by war and war conditions and while many of the strikers, as will be seen by perusal of attached schedules, are still out, separate settlements have been made in many cases within the State and a careful analysis of the whole international strike exhibits the fact that settlements of the international printers' strike within, are more general than without, the State of New York.

The Division of Mediation and Arbitration has used every means within its power to bring about settlement of these cases and efforts have sometimes met with success, in some instances instilling more friendly relations.

On May 2, 1921, the papermakers of the International Paper Company went out on strike. At the same time all of the papermakers connected with the international union of papermakers passed resolutions to go out on strike in all papermaking plants, aside from the International Paper Company, which said plants are known as the Carlisle group, unless adjustment of wages by an increase of about ten per cent should be made on or before May 12, 1921, when said strike was to be made effective.

The International Paper Company refused any increase in wages and refused to arbitrate the question and still refused and countered with a printed proposal dated May 24, 1921, proposing a scale of wages which was figured upon a reduction of about thirty per cent which was shortly thereafter changed to a proposal of about twenty per cent reduction for unskilled labor and ten per cent reduction for skilled papermakers.

The Carlisle group of paper manufacturers entered into an agreement of arbitration with their men after the men had been out on strike for some time. This agreement of arbitration among other things provided that the men should return to work pending the arbitration, at the old scale of wages, and thereafter the arbitrators agreed and submitted a report reducing the wages of the men from ten to twenty per cent with an average throughout of about fifteen per cent. At all times since, the men in this group of plants have been working.

The International Paper Company strike is still on in all of its plants within and without the State, which include other plants in the United States as well as in Canada, with no present outlook for settlement. The Division of Mediation and Arbitration of the State of New York has intervened, as have also the Federal Mediators.

While there are other strikes involving many men within the State, they are among the class of cases which may be best illustrated by mentioning the United Traction Company strike at Albany and vicinity where the employees are not willing to accept the reduction in pay and the employers are not willing to continue the high wages. In this and many other respects many of the strikes listed in the period covered by this report resemble lockouts as much as strikes and while they were brought about by the calling out of the men instead of either discharge of the men by the employer or a cessation of the work, yet the men were called out over threatened reduction many times even though they asked for increases and while the report follows the system heretofore in vogue of reporting out all men who went out, many months before, yet it is within our knowledge that many of the men of the Albany street car strike and other strikes have taken up other occupations and are not really out of work.

While the director of the bureau believes that everything is being done that can be done by the mediators of the State along the line of arbitration and also believes that there is a purpose to do everything that can be done along the line of mediation, however, as heretofore expressed to you personally as well as in writing, I believe that some arrangement should be made allowing us to get information of resolutions and orders whether by the employee or employer, which affect the vital working conditions, hours of labor, wages paid, in time so that a better opportunity to mediate is given the Division of Mediation and Arbitration, if such legislation can be procured that will be both practical and enforceable.

The Division of Mediation and Arbitration, as it has been developing since its formation in the year 1886, shows very important work having been accomplished. However, industrial disputes have increased faster than the State has been willing to advance the work to curb, restrain and control such disputes and the well known and trite method of adjusting industrial controversies by each side choosing a favorite representative and the two choosing a third person, is entirely inadequate under present conditions. While the reports of the work done since 1886 show promising progress, especially in recent years and during the last eight years which show an average of over fifty per cent successful interventions while in the early years of this work it was at times less than one per cent, nevertheless, with sufficiently broad powers and a real opportunity to intervene at an early stage of the controversy, very much more satisfactory work, exceedingly valuable to the State, could be accomplished.

Regardless of who may win a strike ultimately, the public must pay the costs and it is extremely important that the public see to it that an adequate and practical provision be made to limit by laws such costs. Under Section 21, Subdivision 5 of the present law, broad powers of inquiry are given which are now being exercised. However, such power is somewhat indefinite and is not sufficiently specific to forbid able counsel to raise questions as to its scope and authority and in this connection, we wish to ask that Subdivision 5 of Section 21 be amplified in such manner as to put the powers and scope of inquiry so granted by the Legislature to the Industrial Commissioner, beyond question.

That provision be made that both parties to the industrial controversy be required to notify the Industrial Commissioner of any act, resolution, decision, vote or changed conditions of employment, which might lead to strike, lockout or other industrial controversy, at least ten days before the taking effect of such action, decision or resolution, so that mediation may have opportunity to be tried before the parties have passed into the stage of idleness and hostility.

Illustration of the necessity of this provision has recently been given in the milk strike, New York City, in which a vote to strike was held only a few hours before the men were out and also in the now pending ladies' garment workers' strike in New York City, where the strike vote was taken only shortly before leaving work. In this connection I wish to quote from unquestioned authority, showing that this suggestion is neither new nor ill-considered. See Volume X, Messages from the Governors, where Theodore Roosevelt, then Governor said:

> *The work of mediation* — that is, of settling the dispute before it has reached an acute stage — is even more important and successful *than that of arbitration proper*, after the strike is once on. ***This being so, it would be well to enact legislation which would compel parties to labor disputes to notify the Board of impending trouble***, or of strikes and lockouts.

DIVISION OF EMPLOYMENT

Relative to report of Division of Employment, your attention is again called to the report of David S. Flynn, Director of the Bureau of Employment during the period covered by this report.

DIVISION OF ALIENS

In the Division of Aliens, the report is made by Marian K. Clark, now Chief of the Division; however, as the Chief of the

Division is very much impressed with the necessity for the re-enactment of Sections 151, 152, 153, 154, 155 of the Labor Law as they existed prior to Chapter 50 of the Laws of 1921, the advisability of advocating such re-enactment is hereby submitted for your consideration.

ENFORCEMENT OF SECTION 220 OF THE LABOR LAW

The report of the work done under this section is attached hereto as the work of Henry B. Whitney and the writer wishes to suggest as has been already done under date of September 26, 1921, that Section 56, Subdivision 35, of the Code of Criminal Procedure of the State of New York be amended by adding the words: " and labor laws," the reason for which has heretofore been explained and a perusal of such section will show the effect of so doing.

Your attention is also again called to the advisability of either re-enacting so much of old Section 3 of the Labor Law relating to withholding money from contractors who did not comply with the prevailing rate of wages or striking from Section 220 the words " on which the contractor has been convicted of a second offense in violation of the provision of this section."

The reasons for some of the suggestions herein contained are not given in full, hoping thereby to avoid repetition and conserve the time required for perusal, yet assuring you that the writer will gladly amplify such suggestion at any time that you believe it advisable and beneficial to the bureau and department.

SEAMAN F. NORTHRUP,
Director, Bureau of Industrial Relations.

TRADES AFFECTED

	Number of Disputes		Number of Working Days Lost	
	1920	1921	1920	1921
1. Stone, clay, glass products	8	6	18,834	78,732
2. Metals, machines, conveyances	60	27	1,430,267	325,174
3. Wood manufactures	8	5	738,938	4,728
4. Leather and rubber goods	14	8	445,668	317,298
5. Chemicals, oils, paints, etc	4	9	5,982	23,396
6. Paper and pulp	8	3	57,602	475,122
7. Printing and paper goods	5	21	862,135	190,504
8. Textiles	22	7	305,074	246,469
9. Clothing, millinery, etc	16	20	1,436,235	1,819,951
10. Food, liquors, tobacco	23	9	2,663,510	6,959
11. Water, light, power	7	1	6,680	60
12. Building industry	24	41	288,433	886,288
13. Transportation	26	27	1,828,453	1,381,008
14. Trade	8	5	204,754	74,709
15. Hotels, restaurants, etc	3	3	43,180	8,408
16. Professions	2	2	268,000	306
17. Public employment	2	....	4,738	....

PRINCIPAL CAUSE OR OBJECT OF DISPUTES

	Number of Disputes		Number of Working Days Lost	
	1920	1921	1920	1921
Increase in wages	139	53	3,803,755	756,945
Reduction in wages	5	63	55,340	2,383,761
Shorter hours	21	19	1,877,851	193,163
Longer hours	2	1	337,540	2,256
Trade unionism	37	21	4,010,988	2,055,947
Particular person	16	12	132,913	59,604
Working arrangements	14	18	370,618	340,014
Payment of wages	4	5	6,780	17,244
Sympathetic	2	2	12,698	30,15[illegible]

RESULTS OF DISPUTES

	Number of Disputes	
	1920	1921
Strikes successful	74	41
Strikes partly successful	73	49
Strikes lost	93	99

NOTE: Strikes pending on July 1, 1920, 7. Strikes pending on July 1, 1921. 14.

METHOD OF SETTLEMENT OF STRIKES WON OR COMPROMISED

Direct negotiations between parties	83	41
Mediation by State Bureau	49	31
Mediation by other agencies	10	[illegible]
Arbitration	5	6

COMPARISON OF INTERVENTIONS, 1920–1921

	1920	1921
Number of disputes in which intervention occurred	106	90
Number of requests received for intervention	47	39
Number of disputes in which intervention was successful	65	38
Number of disputes in which intervention was unsuccessful	41	54
Number of interventions before strikes	8	[illegible]
Number of disputes in which conferences were arranged	55	45
Number of disputes settled by mediation with parties separately	1	3
Number of disputes settled by arbitration	5	[illegible]
Number of public investigations conducted	1	......

COMPARISON OF DISPUTES, 1918–1921

	1918	1919	1920	1921
Number of strikes and lockouts	265	168	240	194
Employees involved directly	83,650	208,952	334,188	218,858
Employees involved indirectly	6,355	2,006	16,403	2,107
Aggregate days of working time lost	1,519,884	11,346,653	10,608,483	5,839,112

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* Particulars of interventions in 1921 are given in the table which is appended to this report.

TABULAR SUMMARY OF INVESTIGATIONS MADE BY HENRY B. WHITNEY FROM JULY 1, 1920, TO JUNE 30, 1921

LOCALITY	Contractor	Job	Date of investigation	Result of investigation
		EIGHT HOUR LAW (PUBLIC WORK COMPLAINTS)		
Tupper Lake	Joseph Potvin, Superintendent	Village Road Work	Sept. 28 and 29, 1920	Report submitted
Marcy	Scott Brothers	Utica State Hospital	Oct. 13, 1920	Report submitted
Tonawanda	Lupfer & Rennick	Purification Plant	Nov. 22 to 24, 1920	Report submitted
Corning	Bush, Roberts & Schaeffer Co.	Pine Street Bridge	Feb. 2, 1921	Report submitted
Rochester	Walsh Construction Co.	Brown St. Grade Crossing	Mar. 21, 1921	Report submitted
Tupper Lake	James McGroty	Union Free School No. 1, Village of Faust	May 12 and 13, 1921	Immediate compliance and report submitted
Binghamton	H. W. Fitzgerald	River Crossing No. 2, part of main intercepting sewer	May 26, 1921	Immediate compliance and report submitted
		PREVAILING RATE OF WAGES (PUBLIC WORK COMPLAINTS)		
Schenectady	DuBois, Bennett & Son	Schenectady-Scotia Bridge	Aug. 3 and 4, 1920	Report submitted
Elmira	T. L. Eyre	Main Street Bridge (common labor)	Aug. 16 and 17, 1920	Report submitted
Rochester	Brown & Lowe Co.	Barge Canal	Oct. 6, 1920	Report submitted
Rochester	Empire Engineering Co.	Barge Canal	Oct. 6, 1920	Report submitted
Rochester	I. M. Ludington & Sons, Inc.	Barge Canal	Oct. 7 and 8, 1920	Report submitted
Schenectady	American Pipe & Construction Co.	Schenectady-Scotia Bridge	Nov. 6, 1920	Report submitted
Utica	Board of Education	Public School	Nov. 19 and 20, 1920	Report submitted
Tonawanda	Lupfer & Rennick	Purification Plant	Nov. 22 to 24, 1920	Report submitted
Elmira	T. L. Eyre	Main Street Bridge	Feb. 1, 1921	Report submitted
Corning	Bush, Roberts & Schaeffer Co.	Pine Street Bridge	Feb. 2, 1921	Report submitted
Binghamton	Manager, Binghamton State Hospital	Binghamton State Hospital	Feb. 7, 1921	Report submitted
Elmira	T. L. Eyre	Main Street Bridge	Mar. 4, 1921	Report submitted
New York City	New York City Fire Department	Telephone and Telegraph Operators	Mar. 11 to 14, 1921	Report submitted
Buffalo	Eastern Concrete Steel Co.	Buffalo City Hospital	Mar. 17 to 19, 1921	Report submitted
Rochester	Walsh Construction Co.	Brown Street Grade Crossing	Mar. 21 to 26, 1921	Report submitted
Rochester	I. M. Ludington Co.	Barge Canal	Mar. 21 to 26, 1921	Report submitted
Rochester	New England Foundation Co.	Barge Canal	Mar. 21 to 26, 1921	Report submitted
Rochester	Lackawanna Bridge Co.	Barge Canal	Mar. 21 to 26, 1921	Report submitted
Glens Falls	I. M. Ludington Sons	Barge Canal Feeder	April 2, 1921	Report submitted
Olean	Farness & Fote Construction Co.	Paving on Fourth Avenue	May 3 and 4, 1921	Immediate compliance and report submitted
Binghamton	H. W. Fitzgerald	River Crossing, No. 2, part of main intercepting sewer	May 26, 1921	Immediate compliance and report submitted

Elmira	T. L. Eyre	Main Street Bridge	May 27, 1921	Attendance at Recorder's Court
Elmira	T. L. Eyre	Main Street Bridge	June 6, 1921	Attendance at Recorder's Court
Hornell	Edward H. Coogan	Painting all city bridges	June 6 and 7, 1921	Complaint withdrawn
Hornell	Lee Dennison	Paving work for the Department of PublicWorks, cost plus basis	June 7, 1921	Complaint withdrawn

OTHER INVESTIGATIONS

Tupper Lake	In re compensation		July 23 and 24, 1920	Reported to Commissioner Lynch
Athens	Composite Metal Lath Company	In re Section 11	Oct. 20, 1920	Report submitted
Watertown	Peckham Construction Co.	In re Court St. Grade Crossing Elimination	Jan. 5 to 7, 1921	Attendance at court
Elmira	T. L. Eyre	In re Section 11 — Main Street Bridge	Jan. 11, 1921	Report submitted
Corning	Bush, Roberts & Schaeffer Co.	Investigation as to compliance	March 5, 1921	Report submitted
Tonawanda	Lupfer & Rennick	Filtration Plant	March 8, 1921	Verbal report — complaint withdrawn
Buffalo	Eastern Concrete Steel Co.	Buffalo City Hospital (Section 14)	Mar. 17 to 19, 1921	Report submitted
Buffalo	In re wages of bricklayers, as per Commissioner Sayer's request		May 5, 1921	Reported verbally to Commissioner Sayer
Rochester	In re wages of carpenters, as per Commissioner Sayer's request		May 6, 1921	Reported verbally to Commissioner Sayer

TABULAR SUMMARY OF INTERVENTIONS

LOCALITY	Trade involved	Date of strike (actual or threatened)	Number of employees affected	Date of intervention
Albany	Metal polishers	June 29, 1920	10	July 15, 1920
Albany	Bookbinders	Sept. 1, 1920	252	Sept. 9, 1920
Albany	Tailors	Sept. 1, 1920	60	Sept. 28, 1920
Albany	Chemical workers	Oct. 6, 1920	129	Oct. 8, 1920
Albany	Cap makers	Dec. 17, 1920	18	Dec. 30, 1920
Albany	Motormen and conductors	Jan. 29, 1921	1,200	Jan. 22, 1921
Albany	Stationary engineers and waiters (hotel)	Feb. 14, 1921	16	Mar. 3, 1921
Albany	Printing trades	May 2, 1921	761	May 3 to June 12, 1921
Albany	Building trades	May 2, 1921	1,000	May 2, 1921
Amsterdam	Tapestry workers	Aug. 24, 1920	560	Mar. 30, 1921
Auburn	Motormen and conductors	Aug. 4, 1920	171	Aug. 4, 1920
Auburn	Shoe workers	Aug. 17, 1920	500	Sept. 1, 1920
Auburn	Shoe workers	Dec. 29, 1920	75	Jan. 20, 1921
Binghamton	Printers	Mar. 8, 1921	139	Mar. 17, 1921
Buffalo	Clothing workers	July 1, 1920	930	July 15, 1920
Buffalo	Milk delivery men	July 14, 1920	62	July 17, 1920
Buffalo	Waitresses, etc	Aug. 4, 1920	64	Sept. 15, 1920
Buffalo	Molders and coremakers	Feb. 15, 1921	800	April 12, 1921
Buffalo	Street railway employees	Threatened	3,000	April 21, 1921
Buffalo	Printers	May 2, 1921	426	July 15, 1921
Ellenville	Umbrella handle makers	July 21, 1920	40	Aug. 17, 1920
Ft. Edward, Watertown, Piercefield, Niagara Falls, Glens Falls, Corinth, Cadyville, Morrisonville, Ticonderoga	Papermakers	May 1, 1921	3,242	May, June and July, 1921
Glens Falls	Cement workers	June 26, 1920	136	Nov. 11, 1920
Glens Falls	Printers	May 2, 1921	35	May 5, 1921
Gloversville	Carpenters	Jan. 4, 1921	190	Jan. 24, 1921
Hudson Falls	Lumber workers	May 2, 1921	140	May 8, 1921
Ithaca	Printers	May 1, 1921	25	June 24, 1921
Jamestown	Electricians	June 15, 1920	40	June 25 to Jan. 6, 1921
Jamestown	Bricklayers	May 2, 1921	40	July 15, 1921
Morris Heights	Machinists	June 10, 1920	170	Aug. 5, 1920
Mount Vernon	Raincoat makers	Dec. 18, 1920	40	Jan. 26, 1921
Newburgh	Shipbuilders	Aug. 23, 1920	1,500	Sept. 8, 1920
Newburgh	Bakers	May 1, 1921	24	May 17, 1921
Newburgh	Building trades	May 2, 1921	500	May 17, 1921
New York City	Furriers	May 27, 1920	9,000	May 26 to Dec. 21, 1920
New York City	Laboratory men (Motion picture craftsmen)	June 20, 1920	942	July 22, 1920
New York City	Die cutters	July 1, 1920	65	Aug. 9, 1920
New York City	Cigarmakers	July 15, 1920	22	Nov. 29, 1920
New York City	Cigarmakers	Aug. 7, 1920	125	Nov. 29, 1920
New York and Brooklyn	Motormen and conductors	Aug. 29, 1920	11,000	July 28 to Dec. 2, 1920
New York City	Painters	Sept. 1, 1920	12,000	Oct. 5, 1920
New York City	Van drivers	Sept. 1, 1920	2,000	Sept. 20, 1920
New York City	Garage workers	Sept. 30, 1920	1,800	Oct. 4, 1920
New York, Long Island City	Furniture workers	Oct. 7, 1920	200	Oct. 14, 1920

FROM JULY 1, 1920, TO JUNE 30, 1921

Result of intervention	Result of strike
Conference arranged; partial settlement effected	Compromise.
Mediator interviewed employers and arranged joint conference	Compromise.
Several conferences arranged by mediator and satisfactory settlement effected	Compromise.
Mediator interviewed employees	Strike won.
Mediator's efforts to arrange joint conference unsuccessful	Strike lost.
Several conferences arranged by mediator, but unable to bring about settlement	Strike pending.
Mediator endeavored to arrange conference — conference arranged with proprietor of hotel; he would not deal with former employees	Strike lost.
Several conferences arranged by mediator and settlement effected	Strike won.
Arranged conference with sheet metal workers and settlement effected; arranged conference with carpenters and electricians, but no settlement was brought about; interviewed representative of employers and employees in all other trades but unable to arrange joint conference	Strike lost.
Mediator's efforts to bring about joint conference unsuccessful	Strike lost.
Conference arranged by mediator and matters submitted to arbitration	Strike won.
Mediator interviewed both sides	Factory closed down.
Employers refused to meet strikers	Strike lost.
Employers' representative refused to enter conference with employees	Strike lost.
Mediator endeavored to arrange conference; employers refused to meet with representatives of The Amalgamated	Strike lost.
Mediator had conference with employers and with employees; no settlement effected	Strike lost.
Mediator unable to arrange joint conference; employer would not meet or treat with employees	Strike lost.
Mediator's efforts to bring about joint conference unsuccessful	Strike lost.
Mediator investigated — conference with employer's representative and employees, satisfactory adjustment reached	Strike did not occur.
Mediator intervened — employers refused to meet or treat with strikers	Strike pending.
Joint conference arranged by mediator; no settlement reached	Strike lost.
Interviewed representative of International Paper Company and endeavored to bring about conference; company's officials would not meet or treat with employees	Strike pending.
Mediator's efforts to arrange a conference unsuccessful	Strike lost.
Mediator's efforts to arrange a conference unsuccessful	Strike lost.
Efforts to bring about amicable settlement unsuccessful	Compromise.
Conference arranged by mediator	Compromise.
Mediator intervened; employers refused to meet strikers	Strike lost.
Mediator advised the workers to declare strike off	Strike lost.
Mediator interviewed representative of bricklayers' union; could not bring about joint conference	Strike pending.
Mediator interviewed employer and employee	Compromise.
Mediator's efforts to arrange conference unsuccessful	Strike lost.
Interviewed employers and employees; endeavored to arrange joint conference; employers would not meet representative of unions	Strike lost.
Employers refused to meet or treat with strikers	Strike lost.
Conference arranged by mediator; settlement made subject to a referendum	Compromise.
Mediator interviewed both sides; efforts to bring about joint conference unsuccessful	Strike lost.
Mediator arranged joint conference	Strike won.
Joint conference arranged by mediator and settlement effected	Compromise.
Mediator's efforts to arrange conference unsuccessful	Strike lost.
Mediator's efforts to arrange conference unsuccessful	Strike lost.
Conference with employers and employees before and after strike	Strike lost.
Conference arranged by mediator	Strike partly unsuccessful.
Joint conference arranged and settlement effected by mediator	Compromise.
Mediator's efforts to arrange joint conference unsuccessful	Strike lost.
Mediator's efforts to arrange conference unsuccessful	Strike lost.

TABULAR SUMMARY OF INTERVENTIONS

LOCALITY	Trade involved	Date of strike (actual or threatened)	Number of employees affected	Date of intervention
New York-Brooklyn	Bakers	Oct. 30, 1920	1,500	Oct. 30, 1920
New York City	Pipemakers	Nov. 3, 1920	650	Nov. 9, 1920
New York City	Men's clothing	Dec. 6, 1920	65,000	Dec. 6, '20, to June 29, '21
New York City	Harbor boatmen	Threatened	4,500	Dec. 23 to 31, 1920
New York City	Iron and bronze workers	Jan. 1, 1921	2,050	Jan. 5, 1921
New York-Brooklyn	Auto body makers	Jan. 10, 1921	25	Jan. 7, 1921
New York-Hempstead, Long Island	Motormen and conductors	Threatened	165	Feb. 16, 1921
New York City	Waist and dressmaking	Feb. 9, 1921	30,000	Feb. 9 to 17, 1921
New York City	Feather boa makers	Mar. 8, 1921	1,000	Mar. 10, 1921
New York City	Harbor boatmen	Mar. 10, 1921	300	Mar. 1 to Apr. 4, 1921
New York City	House wreckers	Threatened	1,800	Mar. 14 to May 3, '21
New York City	Furniture drivers	Mar. 23, 1921	189	Apr. 7 to Sept. 30, '21
New York City	Cigarmakers	April 1, 1921	100	Apr. 7 and 8, 1921
New York City	Bookbinders	April 12, 1921	1,650	May 12, 1921
New York City	Mariners, etc	May 1, 1921	18,500	May 2, 1921
New York City	Printers	May 2, 1921	53	Mar. 7 to May 2 '21
New York City	Taxi drivers	May 19, 1921	400	May 17 to May 27, '21
New York City	Teamsters	May 23, 1921	520	May 18 to June 1, '21
New York City	Photo engravers	June 1, 1921	225	June 2, 1921
New York-Brooklyn	Butchers	June 10, 1921	1,240	June 20, 1921
New York City	Glaziers, window and plate glass workers	June 13, 1921	......	June 13, 1921
New York City	House wreckers	June 22, 1921	76	June 22, 1921
Oswego	Machinists	Aug. 20, 1920	120	Oct. 28, 1920
Peekskill	Hatters	May 9, 1921	288	May 10, 1921
Poughkeepsie	Carpenters	Investigation	40	July 8, 1921
Rochester	Silver workers	July 6, 1920	89	Aug. 22, 1920
Rochester	Building trades	April 1 to May 1, '21	2,500	April 19 to July 15, '21
Rochester	Machinists	Feb. 1, 1921	96	Feb. 18, 1921
Rochester	Teamsters and chauffeurs	April 1, 1921	165	April 4, 1921
Rochester	Printing trades	May 2, 1921	375	July 15, 1921
Syracuse	Motormen and conductors	Threatened	40	Mar. 1, 1921
Syracuse	Boilermakers	Jan. 17, 1921	75	Mar. 2, 1921
Syracuse	Printing Trades	May 2, 1921	130	Aug. 9, 1921
Tonawanda	Papermakers	Jan. 24, 1921	300	Feb. 3, 1921
Troy-Cohoes	Building trades	April 15 and May 2, '21	546	April, May and June, '21

FROM JULY 1, 1920, TO JUNE 30, 1921 — *(Continued)*

Result of intervention	Result of strike
Interviewed both sides	Strike won.
Mediator arranged conference	Compromise.
Mediator interviewed both sides and endeavored to arrange joint conference	Compromise
Conference arranged by Mediator	Strike averted.
Efforts to bring about joint conference unsuccessful	Strike lost.
Mediator interviewed employer, endeavored to arrange joint conference; interviewed employees who agreed to accept decrease in wages but no increase in hours; offer not accepted	Strike lost.
Conference arranged by mediator	Compromise.
Conference with employers and employees	Strike lost.
Conference arranged by mediator	Strike won.
Conference arranged by mediator	Strike lost.
Joint conference arranged by bureau's representative	Strike averted.
Endeavored to bring about joint conference of employers and employees, but not successful	Compromise.
Mediator's efforts to bring about amicable settlement unsuccessful	Strike lost.
Mediator endeavored to arrange joint conference; employers refused to meet strikers	Strike lost.
Investigation made by mediator; matter was placed in the hands of the U. S. Shipping Board's federal adjusters	Strike lost.
Mediator intervened before and after strike: employer agreed to demands of employees	Strike won.
Joint conference arranged by mediator	Compromise.
Joint conference arranged by mediator	Strike partly successful.
Mediator interviewed employers and employees; found they were holding conferences	Arbitration.
Mediator's efforts to bring about joint conference unsuccessful	Strike lost.
Arbitration hearing held at mediator's office, New York City, between the glaziers' local union of the Brotherhood of Painters, Decorators and Paper Hangers of America, Inc., and The Window and Plate Glass Dealers' Assoc., Inc., of N. Y.	Decision rendered by mediator.
Matter settled by arbitration on June 22, 1921; decision rendered by mediator	Strike averted.
Conference arranged; settlement resulted	Strike lost.
Mediator intervened; employers refused to meet committee of union men. Employers asked union for open shop conditions	Strike pending.
This was not an actual strike; wage adjustment was pending	No strike.
Mediator interviewed both sides; efforts to arrange joint conference unsuccessful	Strike lost.
Mediator interviewed representative of employees and representative of employers; employees refused to consider any reduction from the present scale; employers insisted on a fifteen per cent reduction. Both parties stated that the holding of a conference would accomplish no results	Strike pending.
Mediator's efforts to arrange amicable settlement unsuccessful	Strike lost.
Conference arranged by mediator	Strike lost.
Mediator endeavored to arrange conference; employers refused to meet strikers	Strike pending.
Mediator investigated and found negotiations were pending whereby strike was averted	Strike averted.
Mediator interviewed both sides; conference had failed	Strike lost.
Mediator's efforts to arrange joint conference unsuccessful. Employers refused to meet or treat with strikers; employees stated that the request for a 44-hour week was an international proposition and not subject to arbitration	Strike pending.
Mediator attempted to arrange conference; company refused to deal with committee as selected by the union	Strike pending.
Conference was arranged with sheet metal workers in Albany, Troy and Schenectady; contractors in other trades would not consider conference until settlement was reached in Albany	Compromise.

TABULAR SUMMARY OF INTERVENTIONS

LOCALITY	Trade involved	Date of strike (actual or threatened)	Number of employees affected	Date of intervention
Troy	Plumbers	April 15, 1921	40	April 15, 1921
Troy	Longshoremen	April 9, 1921 threatened.	40	April 14, 1921
Troy	Machinists	July 3, 1920	175	July 8, 1920
Utica	Electricians	Threatened	......	Dec. 28, 1920
Utica	Gas and electric workers	Oct. 26, 1920	55	Oct. 26, 1920
Utica	Building trades	May 1, 1921	462	June 22, 1921
Utica	Printing trades	April 1, 1921	35	May 22, 1921
White Plains	Plumbers	Jan. 3, 1921	40	Jan. 12 to Feb. 14, '21
Yonkers	Printing trades	May 19, 1921	31	May 21, 1921
Yonkers	Machinists	Aug. 21, 1920	390	Aug. 23, 1920
Yonkers	Building trades	April 1, 1921	12,000	April 6 to May 19, '21

FROM JULY 1, 1920, TO JUNE 30, 1921 — (*Concluded*)

Result of intervention	Result of strike
Mediator endeavored to arrange conference but was unable to arrange it	Strike won.
Mediator investigated conditions and found that there would be no cessation of work	Strike averted.
Mediator's efforts to arrange joint conference unsuccessful	Strike lost.
Mediator arranged conference at which arbitrator was selected	Strike averted.
Mediator arranged joint conferences; settlement resulted	Strike lost.
Mediator endeavored to arrange joint conference; builders declared they were not ready for conference	Strike pending.
Mediator endeavored to arrange conference; employers stated they were not ready for conference	Strike pending.
Mediator endeavored to arrange joint conference; employers refused; arranged conference with employees and settlement effected	Strike lost.
Conference arranged by mediator	Compromise.
Mediator endeavored to arrange joint conference	Strike lost.
Suggestions of mediators to both parties finally accepted	Referred to arbitration.

PART VI

REPORT OF BUREAU OF RESEARCH AND CODES

REPORT OF DEPUTY COMMISSIONER

IN CHARGE OF THE BUREAU OF RESEARCH AND CODES

To the Industrial Commissioner:

In compliance with your general order No. 21, the Bureau of Research and Codes has been organized and comprises the former Bureau of Codes, the Bureau of Women in Industry, the Division of Industrial Hygiene and the Engineering Division, which now form four separate divisions of the new bureau.

Each division has continued its former work and has also taken on certain new activities. The Division of Industrial Hygiene will continue to do routine work for the inspection bureau as required and will gradually take on more investigations and research problems for the benefit of the entire department. This division, during the past year, has been engaged in surveys of various factory conditions to determine to what extent employees were injured due to slipping, falling, failure to obey instructions and the manner of wearing clothing while at work.

Data were prepared relating to removal of waste material from woodworking machines and the most satisfactory manner of eliminating dust circulation. Data have also been collected on devices for sanitary control of other materials disengaged in industrial processes. Studies have been carried on relative to occupational diseases, the dyeing and cleaning industry, and general ventilation, humidity and temperature in certain industries.

The Division of Codes has been engaged in the preparation of a code for mercantile establishments, the revision of Rule 2 relating to structural requirements in existing buildings less than six stories high, rules on work in tunnels in compressed air and on suitable lighting for various classes of work.

The referees in this division, when authorized by the Industrial Board, have held hearings on applications for variations from the code on structural changes in existing buildings and on new construction. They are also active members on several code committees of the American Society of Mechanical Engineers.

The Division of Women in Industry has been engaged in several special investigations and has prepared for publication a bulletin on industrial posture and seating. It has also investigated and analyzed physical working conditions, hours, wages and personnel administration in five and ten cent stores. It has studied work accidents among women, employment of women in newspaper offices and, in an advisory capacity, employment of women in general.

The Engineering Division, with offices at Albany, has been engaged in inspection and approval of plans that have been submitted by architects and owners for alterations and for new factory buildings, in passing on plans for plumbing, for proposed elevator installations and in making elevator tests.

Since its organization the Bureau of Research and Codes has been engaged in preparing data on various subjects for the benefit of the Bureau of Inspection and in approval of special devices. It holds regular meetings to formulate plans for improved and staple safety conditions for workers and for the co-ordination of work in the department. The several divisions are represented at these meetings by their chiefs, Messrs. Cullen, Eipper, Vogt, Picard and Miss Swartz, the Deputy Commissioner being chairman.

Except for the war period, when statistics indicate an increase in industrial accidents due to the employment of many unskilled workers who were unfamiliar with the need for personal care in the operation of machine tools, the accidents to factory workers in the operation of tools has gradually, year by year, become less per thousand so employed, indicating that guarding of dangerous places and equipment and increased watchful care by the inspection bureau and employers has resulted in beneficial effects.

However, many industrial accidents do occur, as shown in the report by the Director of the Bureau of Workmen's Compensation. Past experience proves the need for the preparation of additional rules and codes to cover hazardous conditions and to secure greater co-operation of workers and employers. The department must take on other activities such as safety educational work — training employees to exercise greater care in their own behalf and for their fellow workers.

It is apparent that data of accidents as they occur should be promptly tabulated in order to secure the benefit of experience in providing against recurrence of many accidents where the causes are known; therefore, in addition to the statistics of completed compensatable accident cases, now prepared, most of which cannot be compiled for several years after the accident occurs, there should be prepared from the employers' accident reports, as soon as received, the available data, so that the Bureau of Research and Codes and the Bureau of Inspection may be able to take advantage of early information regarding all accidents on which claims for compensation are made. I am now working with the Chief Statistican in devising means to economically and effectively provide such data.

Your request for rearrangement of the working office space by the removal of unnecessary partitions and for the installation of suitable sanitary fixtures and facilities in the building occupied by the Department in New York City has resulted in the preparation of plans and specifications by the State Architect and contracts for such improvements will be let in time to take advantage of the vacation period for the major portion of the alterations.

M. H. CHRISTOPHERSON,
Deputy Commissioner.

PART VII

OPINIONS OF THE ATTORNEY-GENERAL CONSTRUING PROVISIONS OF LABOR LAW

COMPILED BY THE OFFICE OF THE CHIEF STATISTICIAN

NOTE.— In the following pages are printed the opinions rendered by the Attorney-General in construing labor laws during the year 1921. Similar opinions of earlier years may be found in previous reports of the Department. The opinions are here arranged under general subject headings. Opinions dealing with the Labor Law and the Workmen's Compensation Law are placed first, arranged according to section numbers, followed by opinions referring to other laws.

OPINIONS OF ATTORNEY-GENERAL

LABOR LAW

(a) The Prevailing Rate of Wages Provision Does Not Apply to Employees of Boards of Education Receiving Annual Salaries (§ 220, subd. 3).

INQUIRY

Yearly salaries have been established for carpenters, painters, plumbers and laborers by the board of education of the city of Utica. Will you please inform me if this practice is a violation of section 3 [*] of the Labor Law?

OPINION

It appears from a report made by H. B. Whitney, Confidential Agent of the State Industrial Commission, that prior to January 1, 1921, the board of education of the city of Utica was employing one plumber at $7.09 per day: four carpenters at $5.60 per day; two painters at $7.28 per day and three laborers at $3.50 per day; that such board of education had always paid the prevailing per diem rate of wages to such employees until the past summer when the prevailing rates were twice increased and there were not sufficient funds available to meet the demands.

The report of said confidential agent further shows that on the 29th day of October, 1920, such board of education of the city of Utica met to consider the budget for 1921, and finally adopted a resolution establishing in said budget for 1921 certain positions with certain fixed salaries as follows: plumber and steamfitter at $2,000 per year; four carpenters at $1,700 per year; two painters at $1,650 per year; three laborers at $1,000 per year together with two weeks vacation during the year without loss of pay.

It further appears from the report of said confidential agent that the prevailing rate of wages in the city of Utica at the present time of the employees or mechanics performing the same class of work as those for whom the above mentioned positions were created by the board of education is as follows: plumbers and carpenters, $1.00 per hour; painters, 91 cents per hour; laborers, 65 cents per hour, and it is contended that the salaries for the positions so created, if considered from a per diem basis, would be less than the now prevailing rate of wages for such class of work in the city of Utica.

The question has been raised by the State Industrial Commission as to whether or not the payment of these classes of employees and mechanics under the method adopted by the board of education of the city of Utica is in violation of section 3 of the Labor Law, which is as follows:

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[*] New § 220, subd. 3, of the Labor Law is derived from old § 3.

> Eight hours shall constitute a legal day's work for all classes of employees in this state except those engaged in farm and domestic service unless otherwise provided by law. This section does not prevent an agreement for over work at an increased compensation except upon work by or for the state or a municipal corporation, or by contractors or subcontractors therewith. Each contract to which the state or a municipal corporation or a commission appointed pursuant to law is a party which may involve the employment of laborers, workmen, or mechanics shall contain a stipulation that no laborer, workman or mechanic in the employ of the contractor, subcontractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract shall be permitted or required to work more than eight hours in any one calendar day except in cases of extraordinary emergency caused by fire, flood or danger to life or property. *The wages to be paid for a legal day's work as hereinbefore defined to all classes of such laborers, workmen or mechanics upon all such public works,* or upon any material to be used upon or in connection therewith shall not be less than the *prevailing rate for a day's work* in the same trade or occupation in the locality within the state where such public work on, about, or in connection with which such labor performed in its final or completed form is to be situated, erected or used.

With respect to the portion of the section above quoted, which relates to the prevailing rate of wages, it applies only to such work for which a contract or agreement is made with the employee on a per diem compensation: that is the compensation for

> a legal day's work * * * shall not be less than the prevailing rate for a day's work.

The courts have held that a man holding yearly employment at a fixed salary or compensation is not within the intent of the prevailing rate of wages provision, because he

> is not brought into competition with workmen seeking daily or weekly employment, so that he is clearly not within the reason or purposes of the law, which in consequence, does not apply. *Bock* v. *City of New York,* 31 *Misc.* 56.

Also, *In re Farrell* v. *Board of Education*, 113 App. Div., 406, Justice Jenks writing the opinion, in construing section 3 of the Labor Law holds that an employee or mechanic working under an annual salary does not come within the provisions of said section, wherein he states:

> But the language of the Labor Law indicates that it refers to those who are paid daily wages for labor upon public work, and that its purpose is to require that such wages shall equal the prevailing rate paid to other laborers, workmen or mechanics, not engaged upon public work.

We also find that it was the intent of the Legislature that said section 3 of the Labor Law should not apply to a person receiving an annual salary or compensation; but only to those paid under the daily wage method, for the reason that this section of the law applies to the state service equally with the city service, and yet the Legislature has for some time past, under the annual appropriation bill, fixed the compensation of hundreds of laborers, workmen and mechanics on an annual salary basis, which in no way corresponds to the prevailing rate of wages in the community in which these men are located and employed.

Therefore, the only question left for me to review is whether or not the board of education of the city of Utica had the statutory authority to employ the persons hereinabove enumerated upon an annual salary basis.

I find that such acts of the board of education of the city of Utica are authorized and validated under section 887 of the Education Law, as amended by chapter 645 of the Laws of 1919, which empowers the board of education in each city

> to fix the salary and annual salary increment of all members of supervising and teaching staffs and of all principals, teachers, supervisors or other *employees*, whose salaries are not fixed by the provisions of this act

It is perfectly apparent that the acts of the board of education of the city of Utica in fixing annual salaries to these positions are valid; that the persons occupying such positions in no way interfere with or compete with other persons in the city of Utica performing similar work under a daily wage; that in addition to their annual salary such persons are permitted a vacation of two weeks with full pay.

From all the reasons, as above set forth, I can reach no other conclusion than to hold that the acts and proceedings of said board of education of the city of Utica, relative to the employment of the persons herein mentioned, are in no respect a violation of section 3 of the Labor Law.

Dated *January* 13, 1921.

CHARLES D. NEWTON,
Attorney-General.

To HON. JAMES M. LYNCH, *Commissioner, State Industrial Commission, Albany, N. Y.*

(b) The Board May Grant Variations from the Prohibition Against Hoisting Material Outside Buildings (§ 241, subd. 6.) *

October 4, 1921.

HON. HENRY D. SAYER, *Industrial Commission, The Capitol, Albany, N. Y.*

DEAR SIR.—Permit me to acknowledge your communication of the 30th ult. requesting me to advise you relative to section 241 of the Labor Law as follows:

(1) Does the substitution of the word "material" in subdivision 6 of section 241 of the recodified Labor Law change the effect of section 20 of the old law, and (2) if so, has the Industrial Board, or in the City of New York the Board of Standards and Appeals, the right to grant a variation from the provisions of such section under the provisions of section 30 of the Labor Law?

Section 20, chapter 36, Laws of 1909, as amended, provided:

> If a building in the course of construction is five stories or more in height no *lumber or timber* needed for such construction shall be hoisted or lifted on the outside of such building.

Subdivision 6, section 241, chapter 50, Laws of 1921, reads:

> 6. If a building in course of construction is five stories or more high *no material* for such construction shall be hoisted or lifted on the outside of such building.

The word "material" is general in its scope, and includes everything that is used in the construction of a building. It may not have been the legislative intent to extend the statute in this respect, but to hold that an amendment including a greater number of objects than was previously specified is limited to the lesser number is to do violence to the plain import of the English language. Certainly there is as much danger occasioned by the hoisting of structural steel outside of a building as would result from the hoisting of lumber or timber. Therefore, the answer to your first inquiry must be in the affirmative.

To strictly observe the provisions of subdivision 6 of section 241 compels the contractor to disregard other provisions of the same section, to wit:

> Subd. 1. If the floors are to be arched between the beams thereof, or if the floors or filling in between the floors are of fireproof material the flooring or filling in shall be completed as the building progresses.
>
> Subd. 2. If the floors are not to be filled in between the beams with brick or other fireproof material the under flooring shall be laid on each story as the building progresses.

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* L. 1922, ch. 7, has substituted the words, "lumber or timber," for the word, "material," in § 241, subd. 6.

The requirements of these provisions cannot be followed and leave open spaces for hoisting material inside of the building. Numerous changes in plans and structural conditions must be made to permit the hoisting of material from the inside. Dangers are likely to be increased by the necessary manipulations required to hoist the material, transfer it to the outside and place it in position.

It is contended that it is impossible to comply with the terms of the statute in the construction of concrete buildings, and generally, that the added cost of construction makes compliance with the statute prohibitive. Further enumeration of the difficulties attending the enforcement of this law is unnecessary.

In *Lockhart* v. *Hoffman* (197 N. Y. 331), it was held that a provision similar to subdivision 6, formerly a part of section 20 of the Labor Law, by reason of the difficulties and the extraordinary expense attending the alteration and repair of old buildings, did not apply. It would seem from the reasoning of that opinion that if conditions exist in relation to new buildings in the course of construction which make it impossible or impracticable to comply with the provisions of such a statute the courts might likewise hold it inoperative. However, it does not seem necessary to invoke judicial aid in this matter.

The Industrial Board created by section 12 of the Labor Law has been given ample power to adjust the hardships occasioned by this statute.

> § 30. *Variation.* If there shall be practical difficulties or unnecessary hardship in carrying out a provision of this chapter or a rule of the board thereunder affecting the construction or alteration of buildings, exits therefrom, the installation of fixtures and apparatus or the safe-guarding of machinery and prevention of accidents, the board may make a variation from such requirements if the spirit of the provision or rule shall be observed and public safety secured. Any person affected by such provision or rule, or his agent, may petition the board for such variation stating the grounds therefor. The board shall fix a day for a hearing on such petition and give notice thereof to the petitioner. If the board shall permit such variation it shall be in the form of a resolution adopted by at least two votes, and the variation shall apply to all buildings, installations or conditions where the facts are substantially the same as those stated in the petition. The resolution shall describe the conditions under which the variation shall be permitted and shall be published in the bulletin of the department. Where the variation affects premises or conditions in the city of New York it shall also be published in the City Record of New York city. A properly indexed record of all variations shall be kept in the office of the department and open to public inspection.

The plain purpose of the statute was to prevent injuries to passers by and employees engaged in construction work. If the enforcement of the statute results in the increased danger of the employees and others, and makes impractical or prohibitive the construction of new buildings, it is the plain duty of the Industrial Board to adopt resolutions modifying the statute as to such dangers and hindrances.

The answer to your second inquiry is that the Industrial Board has power to grant such variation of the statute as may be consistent with public safety and practical construction.

Very truly yours,

CHARLES D. NEWTON,
Attorney-General.

WORKMEN'S COMPENSATION LAW

(a) State Employees Working upon Canal Boats Are Subject to Admiralty Jurisdiction (§ 2, grs. 8, 10). *

November 29, 1921.

HON. NATHAN L. MILLER, *Governor, Executive Chamber, Albany, N. Y.*

MY DEAR GOVERNOR.— In reference to the two letters submitted by you, one of November 15th from the Superintendent of Public Works and one of October 26th to the Superintendent from Commissioner Sayer, I will say that no doubt the state canals are navigable waterways and are under admiralty jurisdiction as to maritime accidents. It would be doubtful as to whether many of the employees have anything to do with direct navigation of the canals. Only such employees as have to do with the running of canal boats or tugs and the loading or unloading of freight upon the boats would be considered as under maritime employment; and as to such as receive injuries under maritime employment there could be no compensation awarded by the State Industrial Board if the question of admiralty is raised.

It might be possible, perhaps, for the State Industrial Board to decide not to raise the admiralty question in any case involving the state employees on the canal. That would be really a question of policy as if the question is raised there could be no award made in such case which could be sustained by the courts. The State might, however, make an appropriation for the direct insurance of such employees or for the payment of compensation to them, to be determined in the Court of Claims or by the State Industrial Board. Such appropriations, if made, would be in the nature of insurance by the State of its own employees. An effort is being made in Congress to provide by Federal law for maritime workers, both seamen and harbor workers.

I enclose a memorandum in reference to the present state of the law on the subject of admiralty jurisdiction and with reference to the bills which have been introduced in Congress.

Very truly yours,

CHARLES D. NEWTON,
Attorney-General.

Memorandum

In view of the decision of the United States Supreme Court in the case of *Knickerbocker Ice Co.* v. *Stewart*, 253 U. S. 149, the law as to maritime workers is in rather a chaotic condition. That decision which was made by a divided court, five to four, held that in the case of maritime injuries the remedy of the employee was in admiralty and that the Congress of the United States could not delegate to the States the right to provide for a compensation law which would apply to maritime workers.

The Court of Appeals of this State, in the cases of *Anderson* v. *Johnson Lighterage Co.*, 224 N. Y. 539, and *Keator* v. *Rock Plaster Mfg. Co.*, 224 N. Y. 540, has held that even where the injuries are sustained upon a dock, if the employment of the workmen is maritime, they are covered by the Admiralty Law and there is no remedy under the Workmen's Compensation Law.

The Court of Appeals has reiterated this doctrine in two cases lately decided, *Newham* v. *Chile Exploration Co.* and *Insana* v. *Nordenholt Corporation*. In the latter case a petition has been made for a writ of *certiorari* to review the decision of the Court of Appeals in the United States Supreme Court. Whether the United States Supreme Court will review it rests in its own discretion. If it should reverse the Court of Appeals, the dividing line between admiralty remedies and workmen's compensation would be the water line, injuries on board the vessel being in admiralty, and on the dock or pier under the Compensation Law.

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* Since this opinion was written, L. 1922, ch. 615, has revised the Workmen's Compensation Law. Accidents connected with vessels are now covered by §§ 3 and 113. The Supreme Court of the United States, May 29, 1922, reversed the Court of Appeals in *Insana* v. *Nordenholt Corp.*, thereby, as this opinion suggests, making the water line the dividing line between workmen's compensation and admiralty. The President of the United States signed an act, June 10, 1922, excepting persons other than masters and crews of vessels from the exclusive admiralty jurisdiction of the Federal courts.

Various cases have arisen in the Appellate Division as to what was and what was not maritime. In the case of *McBride* v. *Standard Oil Company of New York*, 188 N. Y. Supp. 90, a chauffeur was transferring barrels of oil to his employer's truck from the barge. He was standing either upon the side of the truck or upon the dock making the barrels safe at the rear end of the truck. The brake giving way, the truck rolled back pinning him at the side of the barge. He was taken to the hospital with a broken leg and died from shock following an operation. The Appellate Division held that this was not maritime and affirmed the award.

In the case of *Wildfeuer* v. *Miller & Gold*, 188 N. Y. Supp. 81, the captain of a barge which was tied up at a dock purchased a bed of a retail furniture dealer, and in delivering the bed on board of the barge the employee of the furniture dealer fell overboard and was drowned. In this case also the award was affirmed.

In the case of *Riedel* v. *Mallory Steamship Co.*, 188 N. Y. Supp. 649, an award was made to a night watchman on a pier and the award was affirmed.

In the case of *Grollman* v. *Schooner & Son*, claimant was a night watchman on a pile driver. He fell from a ladder and injured his ankle. In this case the award was affirmed at the November Term.

In the case of *Mangieri* v. *Olin J. Stephens, Inc.*, an award was made to the widow and children of an employee who was employed as a laborer in a retail and wholesale coal and wood business, but at the time of the accident he was pulling a boat up to the dock and fell overboard. Appeal has been taken to the Court of Appeals from the award of the State Industrial Commission.

In the case of *Kennedy* v. *Cunard S. S. Co.*, 189 N. Y. Supp. 402, it is held that a common-law action can be brought for personal injuries, but that in the trial of said action the rules of maritime law should prevail.

In the case of *Danielson* v. *Morris Dry Dock & Repair Co.*, 189 N. Y. Supp. 410, it is held that a ship when in dry dock for the purpose of repair is in navigable waters and subject to the Admiralty Law.

In the case of *Reinhardt* v. *Newport Flying Service Corp.*, the Court of Appeals has just handed down a decision holding that a hydro-aeroplane is subject to admiralty jurisdiction when it rides at anchor upon the water or is being navigated upon the water.

The only effective remedy for this state of affairs would be for Congress to pass a Workmen's Compensation Law applicable to harbor workers. Senator Johnson has introduced such a bill in the Senate and it has passed the Senate, but has not been reported to the House of Representatives and is still in committee. This again seeks to amend sections 24 and 256 of the Judicial Code so as to provide for compensation for injuries to or death of persons other than seamen. This bill would have to run the gamut of the United States Supreme Court again and might or might not be declared unconstitutional. The court is constituted differently now, Mr. Justice Taft taking the place of Mr. Justice White, and if he should vote with the four who were in favor of sustaining the amendment of 1917 it would remedy the situation. The other bill of Senator Johnson provides for a Federal Compensation Law for seamen.

Another bill has also been introduced in Congress, prepared by Mr. Sherman for the Shipping Board, and assumes to provide for compensation for all maritime workers. The Sherman Bill provides a scale of compensation materially lower than the New York Compensation Act, and as I understand, is not so satisfactory to maritime workers as Senator Johnson's bill.

November 28, 1921.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(b) The Chautauqua Institution is Not a Municipal Corporation (§ 2, gr. 43).*

INQUIRY

Is it necessary to insure the employees of Chautauqua Institution under the Workmen's Compensation Law?

OPINION

It appears by a communication from Wilson C. Price, counsel for Chautauqua Institution, that a question has arisen whether it is obligatory upon the corporation to insure its employees pursuant to the provisions of the State Compensation Law.

Chautauqua now operates under a charter granted by the Legislature by chapter 196 of the Laws of 1902, passed March 21st of that year.

This act provides:

Section 1, that the name of the corporation, Chautauqua Assembly, be changed to Chautauqua Institution.

Section 2 enumerates the purposes as follows: "To promote the intellectual, social, physical, moral and religious welfare of the people." It recites that, for its avowed purpose, it may hold meetings, provide recreation, instruction, health and comfort on its grounds at Chautauqua, conduct schools and classes, maintain libraries, museums, reading and study clubs and other agencies for home education, publish books and serials and do such other things as are needful to carry out its general scheme.

Section 3 consolidates Chautauqua University and the Chautauqua School of Theology, then under the sole control of the same trustees as the corporation, Chautauqua Assembly, with the corporation, Chautauqua, and makes their work an integral part of the work of said corporation.

Section 4 provides that the members shall be —

First. Persons now living and named in the original and supplemental certificate of incorporation.

Second. All persons owning a lease on one or more lots or section of a lot on the lands of the corporation.

Third. All persons elected by the trustees.

Section 5 vests the government and control of said corporation in twenty-four trustees. It provides:

> The provisions of the General Corporation Law, not inconsistent with the act relating to directors and boards of directors shall apply to said trustees.

It further provides for a division of the trustees into classes, A and B, and for their terms of office.

Section 6 provides for the election of trustees of Class A directing that they shall ballot annually at a time and place to be selected by them for five trustees of Class A.

Section 7 defines the method of electing Class B trustees providing that the election be held annually on the second Tuesday of August on the corporation grounds at Chautauqua. The voters at such election are to be members owning leases and intermediate vacancies are to be filled by designation by the trustees of that class.

Section 8 is a classification of the terms of the trustees.

Section 9 continues in force the existing by-laws. The trustees are authorized to enact, alter or repeal by-laws and said by-laws may provide that the executive board of the trustees may enact any rule consistent with law and the by-laws for the management of the business or property of the corporation.

Section 10 authorizes the trustees to sell and lease lands without leave of any court.

Section 11 confirms previous leases made without leave of the court.

Section 12. "Inconsistent Laws.— No provision of the General Corporation

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* Under L. 1922, ch. 615, this § 2, gr. 43, has become § 3, gr. 17.

Law or of the Membership Corporation Law inconsistent with this act shall apply to said corporation."

Section 13 locates the principal office on the Assembly Grounds at Chautauqua, but it is provided that lawful meetings of trustees may be held without the State.

Section 14 is a repealing clause.

Section 15 saves to the corporation the rights, duties, etc., of the corporation as formerly known.

The act incorporating the Chautauqua School of Theology (chapter 63 of the Laws of 1881), followed the same general lines as the present charter, except that the objects were stated as the teaching of subjects in preparation for the clerical profession, and it was authorized to grant degrees.

Chautauqua University was incorporated by an act passed March 30, 1883, chapter 148 of the laws of that year, with the avowed object of promoting liberal education. It had the right to give diplomas and university degrees.

There is no indication in the various charters of incorporation that an attempt was being made to create municipal bodies for the purpose of local government. There is on the other hand a very evident intent to create eleemosynary corporations in each case.

There are various other acts, passed at different times in the history of the institution, affecting the regulation and control thereof. Among them is chapter 138 of the Laws of 1881 by which the corporation then denominated The Chautauqua Lake Sunday School Assembly was authorized to make and enforce rules in regard to slops and garbage within the corporation grounds and a plan was provided for assessment to defray the expenses thereof.

Another statute is chapter 403 of the Laws of 1886 which prohibited railroad companies from constructing or operating railroads through the institution grounds.

Chapter 312 of the Laws of 1900 constituted the grounds of the corporation a separate health district and made the institution trustees a board of health exempt from local jurisdiction, but subject to the visitation and inspection of the State Board of Health.

In none of these acts has any State fund been made available for the use of the corporation.

The Workmen's Compensation Law (chap. 67, Consolidated Laws), provides in section 2, that,—

> Compensation provided for in this chapter shall be payable for injuries sustained or death incurred by employees engaged in the following hazardous employments: * * * Group 43. Any employment enumerated in the foregoing groups but carried on by the State or a municipal corporation or other subdivision thereof, notwithstanding the definition of the term 'employment' in subdivision five of section 3 of this chapter.

It must be conceded that many of the workers employed about the institution are in fact included within the literal descriptions in the "foregoing groups."

Employment is defined in subdivision 5 of section 3 of the act as follows:

> "Employment" includes employment only in a trade, business or occupation carried on by the employer for pecuniary gain, or in connection therewith, except where the employer and his employees have by their joint election elected to become subject to the provisions of this chapter as provided in section 2.

Subdivision 3 of section 3 of said act is as follows:

> "Employer," except when otherwise expressly stated, means a person, partnership, association, corporation, and the legal representatives of a deceased employer, or the receiver or trustee of a person, partnership, association or corporation, employing workmen in hazardous employments including the state and a municipal corporation or other political subdivisions thereof.

In order to be subject to the terms of the act the institution must be found to be either an employer engaged in an occupation "for pecuniary gain," or it must fall within one of the classifications of Group 43 above cited.

When the Workmen's Compensation Law was enacted in 1913 by chapter 816 of the Laws of that year, the word "employer" was expressly defined as not including the State or a municipal corporation or other political subdivision thereof.

By chapter 316 of the Laws of 1914, the act was amended to define the term "employer" to include "the State and a municipal corporation or other political subdivision thereof."

By an opinion reported at page 191 of opinions of the Attorney-General for the year 1914, it was pointed out that although the State and its political subdivisions were at that time subject to the operation of the law, yet the act did not apply to any activities, State or otherwise, unless the work carried on was for pecuniary gain. This position was sustained in the case of *Allen* v. *The State of New York*, 173 A. D. 455.

It was probably the fact, that the number of instances where the sovereign or its political subdivisions are engaged in any work for pecuniary gain are almost negligible, that led the Legislature, in order to make the State and its subordinate divisions more fully amenable to the operation of the law, to pass the amendment to section 1 of chapter 622 of the Laws of 1916, which added to the various groups of employments subject to the operation of the act, Group 43 above set forth. The term "employment" as there defined is made applicable to the State or its political subdivisions regardless of whether the work is conducted for pecuniary gain or not as limited in the general definition in subdivision 5 of section 3 of the act. All employers properly coming within Group 43 are subject to the operation of the law without regard to the limitations of the general definition of the term "employment."

As stated above the conclusion upon the query advanced will be determined by the answer to two questions: is this one of a class of corporations carrying on business for pecuniary gain, or are its workers engaged in an employment comprehended within the descriptions in the various groups in the compensation law and carried on by it as "a municipal corporation or other subdivision thereof."

Is it a municipal corporation or other subdivision thereof within the meaning of the Workmen's Compensation Law? The determination of this question is not without difficulty. The General Corporation Law, Consolidated Laws, chap. 23, section 3, defines a municipal corporation thus: "A 'municipal corporation' includes a county, town, school district, village and city and any other territorial division of the State established by law with powers of. local government."

Although the authorities are not entirely in accord as to the proper technical classification of public corporations with relation to their functions, they may, for the purpose of the discussion of this question, be divided into municipal or public and quasi public.

There are certain municipal corporations so well defined as to leave no opportunity for question as to their nature. These are the constitutional civil divisions, viz — counties, towns, cities and villages. It is evident that the institution under discussion could in no manner be held to fall within any of these classes of municipal corporations. There is no hint anywhere in the statutes affecting it that it was intended to be incorporated as a city or village. It is true that like all areas of congested population it has been necessary to provide a system of sanitary control which resembles those of cities and villages. This is also true of its lighting and heating facilities and other allied local community interests; but assuming that it had by direct grant all the powers and rights of a legal municipality, still it would be an unconstitutional body. *People ex rel. Yost* v. *Becker*, 203 N. Y. 201.

The question before the court in that case was the validity of the commitment of the relator by a police justice "of the Area or Territory of Sylvan Beach, N. Y." The court set out in considerable detail the acts fixing the character of said area or territory and after discussing the several statutes state that a legal municipal corporation was created unless the Legislature was restrained by the constitution from instituting it. At page 208 of the opinion, Judge Collin, writing, says:

> We hold that the adoption by the constitution of counties, towns, cities and villages as the civil divisions exercising general powers of local government and the local auxiliaries of the state government is equivalent to a direct prohibition against the creation of other civil divisions vested with similar powers.

And again at page 209 —

> It is an element essential in the incorporation of a county, town, city or village that it be incorporated by expressed classification a county, or a town, or a city, or a village. The legislature must, in order that our political system have orderly and intended operation, give to a body corporate having general powers of local government a classification or denomination and thereby fix its proper place in the governmental machinery. The body at the bar is denominated 'area or territory,' and in case we amended it to a village or city, or deemed it thus amended, we would perform a legislative and not a judicial act.

The court held the acts, purporting to incorporate the area, unconstitutional and void.

For the reasons stated there it is clear that Chautauqua Institution is not a legal municipal corporation coming within the constitutional civil divisions. There has been no attempt to constitute it as such, and if there had, such attempt must have failed since there has been no denomination of it as one of the divisions authorized by the constitution.

Let us now recur to the definition of a municipal corporation in the General Corporation Law. It includes, in addition to the civil divisions above referred to, a school district and " any other territorial division of the State established by law with powers of local government." Undoubtedly a school district, even if not included in the definition is a quasi corporation of very limited powers. (*Harris* v. *School Dist. No.* 10, 28 N. H. 62; *Union Free School Dist.* v. *Village of Glen Park,* 109 A. D. 414; *Barnes* v. *District of Columbia,* 91. U. S. 540.) But no argument occurs to me which would bring the present corporation within such a classification, and I, therefore, disregard it There is, however, some question as to the comprehensiveness of the term last above quoted as well as in connection with the true meaning of the term " other political subdivision," and " other subdivision " as used in the Compensation Law. In the Becker case counsel for the respondent argued that the area of Sylvan Beach was legally incorporated under the provisions of the General Corporation Law as a territorial division of the State. The court said this argument required no consideration.

There are several cases in the books holding that there are municipal corporations without the strict classification set forth in the Becker case. *Cook* v. *Port of Portland,* 20 Oreg. 580; 13 L. R. A. 533; *People* v. *Draper,* 15 N. Y. 532; *Barnes* v. *District of Columbia,* 91 U. S. 540.

The Becker case did not decide that there could be no other municipal corporations than those therein set forth. It held that the attempt to incorporate a civil division with the powers similar to a city or village failed because of improper denomination. A city or village could be incorporated in only one way and that method had not been followed. It was therefore unnecessary to consider the other arguments

There is a great amount of illuminating discussion in the opinion in the case of *Dartmouth College* v. *Woodward,* 4 Wheaton, 518, on the essential attributes of corporations, similar to the one here under discussion.

Mr. Justice Storey, (p. 668), points out very clearly that the nature of the work of the institution has no relation to the question of whether a corporation is a public one or not. At page 671 he says:

> The fact, then, that the charity is public, affords no proof that the corporation is also public; and, consequently, the argument, so far as it is built on this foundation, falls to the ground. If, indeed, the argument were correct, it would follow, that almost every hospital and college would be a public corporation; a doctrine utterly irreconcilable with the whole current of decisions since the time of Lord Coke. * * * When the corporation is said at the bar to be public, it is not merely meant, that the whole community may be the proper objects of the bounty, but that the government have the sole right, as trustees of the public interests, to regulate, control, and direct the corporation, and its funds and its franchises, at its own good will and pleasure. Now, such an authority does not exist in the government, except where the corporation is in the strictest sense public; that is, where its whole interests and franchises are the exclusive property and domain of the government itself.

To the same effect see *Regents* v. *Williams*, 9 Gill and Johnson 365; 31 Am. Dec. 72. So here, the fact that Chautauqua Institution is engaged in a work public in its nature, casts no light upon the question at hand and has no bearing upon the inquiry as to whether such institution is a municipal corporation or not. The following extract from Mr. Justice Bradley's opinion in the case of *Mayor, etc.*, v. *Ray*, 19 Wall 468, is quoted with approval in *Wells* v. *Town of Salina*, 119 N. Y. 280, at page 295:

> A municipal corporation is a subordinate branch of the domestic government of a state. It is instituted for public purposes only, and has none of the peculiar qualities and characteristics of a trading corporation instituted for purposes of private gain, except that of acting in a corporate capacity. Its objects, its responsibilities and its powers are different. As a local governmental institution it exists for the benefit of the people within its corporate limits. The legislature invests it with such powers as it deems adequate to the ends to be accomplished.

In *MacMullen* v. *City of Middletown*, 187 N. Y. 37, at page 41, it is said:

> A municipal corporation is a political or governmental agency of the state which has been constituted for the local government of the territorial division described and which exercises, by declaration, a portion of the sovereign power for the public good.

And again, at page 43:

> These principles are familar from their frequent statement in the books and their brief summary here is to emphasize the idea that a municipal corporation is but a part of the machinery of government; that it is the creation of the legislature, which endows it with certain local governmental functions and imposes upon it the performance of certain duties, and that its every feature is subject to the regulation of the legislature in granting the charter and to the right of that body to change, or to modify, as the public interest may demand.

In an Illinois case, the *People* v. *Trustees of Schools*, 78 Ill. 136, it was held that school townships as constituted by the General School Law were not municipal corporations in nature or purpose. Article IX, section 5, of the Illinois Constitution provided:

> The corporate authorities of counties, townships, school districts, cities, towns and villages, may be invested with power to assess and collect taxes for corporate purposes.

The question before the court was whether this section authorized school townships to incur a debt, and having contracted the same, levy and collect taxes to pay it. Mr. Justice Walker held that they were not created to exercise any of the functions of government and hence were not municipal corporations nor were they provided with the officers or power to exercise governmental functions. He contrasts them with cities and towns and states that the latter were created and maintained to aid in the government of the people. He says, page 139: The constitution makers when they used the language, "for corporate purposes," supposed that if any question arose in the construction of the clause, the department of state, applying its principles, would determine the real object of the creation of the body and limit it to that purpose. "They did not, on the one hand, expect that there would be an effort to push the construction to the extent that it would embrace all purposes which might by possibility be brought in the corporate power."

At page 141 he says:

> If, because a municipal corporation, created for governmental purposes, may be invested with such powers, it does not follow that some other body, having some of the attributes of a municipal corporation, may be.

I think it is clear that the State may delegate certain municipal powers to its citizens without constituting them, by such delegation, municipal corporations. There seems to be no plausible reason that could be advanced in support of the theory that the charter of incorporation of the institution, as originally granted, created a municipality. If it is now a municipal corporation, for any purpose, it is because of the various statutes passed dealing with the activities incidental to its broadening growth and expansion. Generally speaking, its members and guests are liable to the town and county laws just as in any other section. It has no statutory territorial limitations or boundaries. It maintains no courts, elects no administrative officers by vote of the people and has no jurisdiction to punish criminals. The basis of representation for governing the institution is determined not by the citizenship of the voter, but upon the question of whether he is a member or not, and that, in turn, is governed by an arbitrary rule of selection based upon ownership of land or the accident of being one of the persons named in the original or supplemental certificate of incorporation or election to membership by the trustees. It is true that the corporation has by special statutes some rights delegated to it which savor of the municipal element. Witness the act creating it a separate health district.

The court in the case in 78 Illinois referred to above, construed a constitutional provision of a similar nature to the question here involved and held that a reasonable rule must be applied.

It may very well be said that, in defining the term "municipal corporation" in the General Corporation Law, as well as in the Workmen's Compensation Law, the Legislature to paraphrase the court's statement in the Illinois case cited above, did not expect that there would be an effort to push the construction of such definitions to embrace all cases which might by possibility be brought within the meaning of the term.

To follow the analogy further, it is, apparently, also true that "because a municipal corporation, created for governmental purposes may be invested with such powers, it does not follow that some other body, having some of the attributes of a municipal corporation," is one.

It cannot be possible that the Legislature intended to include, within the definitions in the General Corporation Law and the Workmen's Compensation Law, above referred to, all corporations, of whatsoever kind, that might be carrying on, as an incident to their main purpose, any activity, which is common to municipalities.

It must be that we are allowed to examine into all the facts in each case to determine in which class a corporation belongs, any other theory would impute to the Legislature an intent foreign to the general principles of law. It is conceded as a matter of course, that where the Legislature has spoken unequivocally, there can be no argument over its *dictum*, but a too literal construction of this definition would be subversive of our ideas of municipal corporations. A municipal corporation is simply an arm or agency of the State established for governmental purposes in some certain locality. It is a trustee for the whole State of its property and powers.

It has already been demonstrated that Chautauqua could not have been constituted a municipal corporation proper and if it is a public corporation within the definition, it must be a quasi corporation. These are defined as governmental agencies created solely to administer the general State laws. They are involuntary organizations imposed by the State without considering the wishes of the community. They are not chartered and clothed with documentary evidence of authority like a full corporation and have no incidental powers or inherent corporation attributes. 28 Cyc. 132, and cases cited.

Measured by this rule the institution is not a quasi public corporation.

Suppose the Legislature passed a law repealing the act which created the institution a separate local health unit. The rules and regulations now in force would still have to be enforced practically as they are today and just as they would be if the project were being carried on by an individual. Would the corporation be any more or less a municipality by reason of such repeal? The local regulations and control, necessitated by the activities and magnitude of the project, are incidental to the main purposes of the corporation and are no different than those of any large institution privately endowed and supported. The fact that its management has been facilitated by special laws could not change the nature of the corporation itself. The regulation of its activities would have to be carried on if the special laws were repealed. As well say that a private college, hospital or individual activity becomes a municipal corporation within the meaning of the compensation act as soon as the internal affairs thereof require sanitary, police and health regulations. To hold that this institution is a municipal corporation would be equivalent to including within the term practically every form of activity where any considerable number of people are gathered in one locality with the resulting need for local sanitary and police protection. The corporation has by charter no delegation of governmental powers except those necessary to the control of its private business. The grants of quasi public rights by special statutes could not change the whole purpose of its creation. To be a municipal corporation it must have been created primarily and essentially for governmental purposes. We have seen that such attributes of a public or municipal character as it has have been incidental to its other and avowed purposes.

The various special acts, authorizing a sewage system, creating it a separate health district, etc., could not have changed it from an eleemosynary to a municipal institution. That would, in effect, be accomplishing by implication and indirection what the constitution has prohibited being done directly, namely, instituting a municipal corporation without denominating it as such. *People ex rel. Hon Yost* v. *Becker*, cited above. It would be more reasonable to infer that these acts created a separate municipal corporation in each case. This, I believe, is untenable.

Let us now consider the question whether it is an employer of labor for pecuniary gain within the statutory definition.

The handbook of information issued by the institution states that the institution is carefully administered to keep the annual expenditures safely within the budget. That with the exception of panic years there is a surplus which is devoted to plant renewals and improvements. That it is dependent upon its friends for contributions and endowments to make expansion. It states: "No stockholders are drawing dividends from Chautauqua. No large salaries are paid." All receipts, income from various sources, such as endowments, fees charged for admission at the gates, tuition fees, etc., are applied to carrying on and expanding the work. Its avowed purpose is the carrying on of educational and religious work.

The facts at hand indicate that there are various enterprises carried on within and about the grounds of the corporation, which, if directed and managed by it directly would undoubtedly make it an employer of labor for pecuniary gain within the meaning of the statute.

Information furnished by counsel for the institution, however, shows that the business enterprises referred to are not carried on by the corporation but by private interests. He says:

> The lumber yard is located outside of the grounds and is conducted by Harman Farr as a private enterprise. The blacksmith shop is in the same class. Various stores are run as concessions by private persons.

> For instance, the institution owns the building, a part of which is occupied by the Clarke Baking Company of this city, the company paying a fee for the concession which covers the rent of the building. The company agrees to carry sufficient stock of baked goods to meet the demand, not to charge excessive prices, and all profits belong to the Baking Company. This arrangement is similar to that carried out in the other cases.

It must be determined whether the institution, by granting leases and concessions to persons conducting independent business activities and accepting rent therefrom, becomes an employer for pecuniary gain.

In a recent case, *Castor* v. *Collegiate Baptist Church* (not yet reported), one of the disputed questions was whether the defendant was an employer of labor for pecuniary gain in renting and conducting a loft building, which it owned, for factory purposes.

Castor, an elevator conductor in said building in the employment of the church, was injured in the course of his employment and subsequently died as a result thereof. The State Industrial Commission held that the church was an employer within the statute and made an award to the widow. Commissioner Boyle, writing for the Commission, says:

> There is nothing whatsoever to differentiate the business of this employer from that of any other conducting a building rented for business or manufacturing purposes.

It is significant that the defendant was in actual charge of and was "conducting" the building. The Appellate Division affirmed without opinion.

In *Uhl* v. *Hartwood Club*, 177 A. D., 41; 163 N. Y. S., 744; affirmed 221 N. Y., 588, it appeared that the defendant was a membership corporation organized to acquire land, ponds and streams of water for a fishing and hunting preserve and as a pleasure resort for its members. It sold cottage sites, had the right to erect and maintain a club house and the powers incidental to said purposes. It acquired 6,000 acres of land mostly timber. From this tract it sold lumber, railroad ties, telegraph poles and firewood. The cutting was carried on by club employees throughout the greater part of the year and the profits went into the club treasury and in some cases was paid to members as dividends. One of the club employees was killed while engaged in cutting timber and upon the application of the widow for an award under the Workmen's Compensation Act, the question arose whether the club was estopped to plead that it had no right to engage in the particular business in which Uhl was killed, for pecuniary gain.

The Appellate Division (Judge Woodward dissenting), held that the club could not defend on the ground that the occupation of decedent was *ultra vires.*

In the Court of Appeals it was said that whether or not a club or individual was engaged in forestry for pecuniary gain was a question of degree. In a memorandum opinion, page 589, they say:

> But where the owner of a large tract of woodland cuts and sells the lumber upon it regularly, although that work may be incidental to his main business, he comes within the definition of the statute.

The question came up for consideration in *Vine* v. *West End Presbyterian Church*, 190 A. D., 886. Vine, a carpenter, employed by the church, was injured while engaged in his work. All interested parties agreed upon a settlement by which the injured workman received compensation for thirty-two weeks. Subsequently and on April 16, 1917, the Commission terminated the agreement and closed the case on the ground that the church was not conducting a business for pecuniary gain and, therefore, was not under the Compensation Law.

Subsequently application was made to reopen the case and to enforce the agreement. Commissioner Sayer in his opinion states that the principal question is whether an employer conducting a hazardous occupation but not operating for pecuniary gain may be held under the Compensation Law where he has agreed to pay compensation and the same has been accepted by an employee for a long period and no appeal has been taken from the decision of the Commission approving the agreement.

He also states that the church could avail itself of the defense that it was not an employer conducting a business for pecuniary gain but neither the employer nor the insurance carrier made such defense. The approval of the agreement by the Commission was in effect an award and no appeal having been taken within thirty days said agreement continued in force. He then discusses the jurisdiction of the Commission to terminate the agreement and holds that they have the right to set aside their order terminating it and decides that compensation should be awarded to date and the case continued for consideration of future disability.

An appeal was taken from this decision to the Appellate Division (190 A. D. 886), and that court reversed the award and dismissed the claim without opinion which was in effect holding that the defense that the employer was not engaged in business for pecuniary gain was a valid defense and the church was not estopped to plead it at any time.

In the case of *Francisco* v. *Oakland Golf Club*, 193 A. D. 573, it appeared that one Francisco was a cook employed by defendant, a membership corporation. It maintained a restaurant on the *a la carte* plan for members and their guests. While at work cooking a chicken in the kitchen of the restaurant he was fatally burned. His widow made a claim for compensation. The State Industrial Commission made an award in her favor and an appeal was taken to the Appellate Division. That court reversed the award and dismissed the claim. The opinion, written by Mr. Justice H. T. Kellogg, at page 574, says:

> The club was maintained exclusively for social purposes and to provide members with opportunities to engage in the game of golf and other outdoor sports. It was supported by annual dues paid by members, and was not engaged in any business enterprise whatsoever. Even its restaurant, which was operated to promote the social activities of the club, was so conducted that its yearly disbursements for maintenance exceeded its yearly receipts. No dividends were distributed by the club to its members, nor was it within the contemplation of its organizers or members that dividends should ever be paid. It is entirely clear, therefore, that the deceased employee was not employed in a trade, business or occupation carried on by his employer for pecuniary gain within the meaning of subdivision 5 of section 3 of the Workmen's Compensation Law.

It is apparent from the examination of the above authorities that a corporation such as Chautauqua could engage in a business enterprise for pecuniary gain within the meaning of the Compensation Law. All authorities consulted, however, holding institutions liable under the act, where they were not primarily organized and carried on for private business purposes, have been those where the employers had direct charge and supervision of the work. It is clear that a club or institution cannot directly engage in or carry on a private enterprise for profit and thereafter when an injured employee makes a claim for compensation under the act, avoid liability by pleading that it had no authority to engage in such business. See cases cited above.

It is plain that, as to the employees of the business enterprises carried on at Chautauqua by lessees or holders of concessions from the institution and of which it does not have the direct conduct and direction, it would not be liable under the Compensation Law. Such employees are not its employees. It is also equally clear that if any of its business activities are, in fact, directly within its management and control and operated for pecuniary gain, and otherwise within the statutory description, as to these, it is clearly within the purview of the act and liable the same as any other employer.

It should also be noted that, if it conducts any enterprises falling within the class last above set forth, the patrolmen and possibly others of its employees, under the law as stated in *James* v. *Witherbee-Sherman & Co.*, *Inc.*, 2 State Department Reports, 483, would properly fall within the protected class.

Of course, there can be no question about the liability of the employers who operate the various independent enterprises. Assuming that their employees come within any of the classes designated as hazardous in the statute, they are clearly within the act.

Since Chautauqua is clearly within the constitutional inhibition preventing its creation as a full municipal corporation and, for the reasons herein stated, cannot be held to be *quasi* public in its powers, I conclude that it does not fall within any of the classes set forth in Group 43 of section 2 of the act. As to the remaining question, whether it is included within the classification of corporations carrying on business for pecuniary gain as defined by the Workmen's Compensation Act, I am satisfied that, so far as any business activity is concerned, which is carried on through concessions or leases and by independent management, and from which the institution simply receives rents without sharing in the direct conduct or profits of the same, it is not.

This conclusion, however, must be qualified by the statement that, if there are any business enterprises carried on by its employees for gain and coming within the classes of hazardous employments enumerated in the act, the receipts of which go directly into the corporation's treasury, as to such employment of labor it is within the Compensation Act. And assuming such a state of facts other employees, as, for example, the local policemen paid by the institution, might also be brought within the operation of the act.

I am of the opinion that Chautauqua Institution, except as the rule is qualified above, is not covered by the provisions of the Workmen's Compensation Law.

Dated, *April* 16, 1921.

CHARLES D. NEWTON,
Attorney-General.

To WILSON C. PRICE, ESQ., *Jamestown, N. Y.*

(c) Volunteer Firemen Are Not Entitled to Compensation (§ 2, gr. 43).*

July 25, 1921.

IRA R. SEARBY, ESQ., *Secretary, Alpha Hook, Ladder and Hose Company, Roosevelt, L. I., N. Y.:*

DEAR SIR.— In reply to your inquiry of the 21st, would state that there is no provision in the Workmen's Compensation Law for volunteer firemen in a village who are injured while fighting fire.

I do not think a volunteer fire company would be liable for injuries to third persons while going to or returning from fires.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(d) Only Public Employments Enumerated in the Law are Within its Coverage; Preferable Insurance (§ 2, gr. 43).†

October 13, 1921.

JAMES O. SEBRING, ESQ., *Corning, N. Y.:*

MY DEAR SIR.— In reply to your inquiry of the 10th inst., would say that if the city takes out an insurance to cover its employees it would cover any employee who receives an accident in one of the first forty-two hazardous groups specified in the Compensation Law. It would not, however, be necessary for the city to pay a premium except upon such employees as come within those groups and are included in the payroll as audited by the insurance company.

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* Under L. 1922, ch. 615, this § 2, gr. 43 has become § 3, gr. 17.

† Under L. 1922, ch. 615, this § 2, gr. 43, has become § 3, gr. 17 and § 35, amended radically has become § 50, subd. 4.

The State insurance fund insures employees at a lower rate than the stock insurance companies, about 15 per cent. lower I think. If your county adopted the taxation system as specified in section 35 of the Workmen's Compensation Law, the town, village, city and county employees would be covered by such town, village, city or county under the taxation system, by which they would not be required to insure but would pay the awards as they were made.

Very truly yours,
CHARLES D. NEWTON.
Attorney-General.

(e) Employees of the Palisades Interstate Park are State Employees (§ 2, gr. 43).*

November 5, 1921.

HON. HENRY D. SAYER, *State Industrial Commissioner*, 124 *E.* 28*th Street. New York City:*

DEAR SIR.— Replying to your letter of the 28th ult. with reference to the Palisade Park Commission and in answer to your questions would say:

1. The Palisade Park Commission is, I think, one of the agencies of the State government and, therefore, its employees are covered by the compensation insurance placed by the State of New York in the State insurance fund.

2. There will be no difference in the coverage of employees as to whether a fee is charged for the service of the employee or not, as the question of pecuniary gain does not apply to State employees as specifically stated in group 43.

3. I do not think there should be any distinction between employees paid by State appropriations and those paid from private funds.' If the employees are State employees they are such no matter from what source their wages or salaries are paid.

4. All employees of the commission would not be covered but only those specifically enumerated in the first forty-two groups or in group 44 or in the first group 45.

Hoping this answers your inquiry, I am,

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(f) Inflammation Due to Constant Wetness of Feet is not Accidental (§ 3, subd. 7). †

October 29, 1921.

JOHN W. GENAWAY, ESQ., 17 *E. Main Street, Malone, N. Y.:*

DEAR SIR.— Your letter to Mr. Bates, asking opinion with reference to a man working in a paper mill, has been turned over to me for reply. I am inclined to believe that the situation you speak of, where a man contracts thrombo-phlebitis from having wet feet all the time, would be an occupational disease and not an accidental injury. As an occupational disease it is not enumerated in the schedule contained in the Workmen's Compensation Law so that I am quite doubtful as to his having any claim under the Workmen's Compensation Law unless you can prove some specific accident that contributed to the condition.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

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* Under L. 1922, ch. 615, this § 2, gr. 43, has become § 3, gr. 17.
† Under L. 1922, ch. 615, this § 3, subd. 7, has become § 2, subd. 7.

(g) An Employer is Liable for Treatment and Care Though His Injured Employee Sues Third Party; Recovery of Amount (§§ 13, 29).

November 9, 1921.

HON. HENRY D. SAYER, *State Industrial Commissioner*, 124 *E. 28th Street, New York City:*

DEAR SIR.— In reply to your letter of the 7th inst. in reference to liability for medical services where the employee elects to sue a third party,

1. I am of the opinion that the employer is liable under the Compensation Law for medical and hospital treatment and care furnished to his employee, even if the employee subsequently elects to sue a third party. The theory of the Compensation Law is that the employer is in the first instance liable in all cases for accidents arising out of and in the course of employment specified in the groups. There is, therefore, a primary liability upon the employer to furnish medical and hospital treatment as provided in that law. The fact that an employee elects to sue a third party does not relieve the employer from this liability as he is still liable for any deficiency in case the employee collects from the third party. I also think you are right in saying that the expense for medical treatment is not technically compensation but is a liability imposed by law upon the employer in case of accidental injuries.

2. In answer to the second inquiry, would say that in an action by an employee against the third party he could no doubt include medical expense in his claim, provided he had paid for the same as that would be part of the damages which before the Compensation Law was passed he might include in such an action. If he, however, had not paid for the medical expense and was not liable for it, I do not think he could include it in his action.

As to what right the employer would have to recover amounts paid by him for such medical expense, it is definitely decided by the Appellate Term in the case of *Bossert & Sons* v. *Piel Bros.* that the employer could not recover such expense from a third party who had been sued by the employee. As to whether the employer could recover from the employee such expense, when the latter had recovered either by suit or compromise a larger sum than the amount of his compensation, there may be some doubt. I am, however, inclined to think that where the employee had requested medical service which had been given by the employer, and then the employee does recover a larger sum than his compensation, the employer could recover from the employee such medical expense in an action of *assumpsit*. As there is some doubt about this, it might be well while the Compensation Law is in the process of amendment to have some amendment inserted that would cover this question.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(h) The State May Carry an Employee on its Payroll While He is Receiving Compensation for Permanent Partial Injury (§ 15, subd. 3).

September 6, 1921.

STATE HOSPITAL COMMISSION, *The Capitol, Albany, N. Y.:*

GENTLEMEN.— Receipt is acknowledged of yours of the 8th ulto., enclosing letter from the Superintendent of the Central Islip Hospital, dated August 6, 1921, copy of letter from the Industrial Commission, dated August 2, 1921, copy of letter from the Superintendent of the Central Islip Hospital, dated June 7, 1921, together with his statement as to the case of said Christian Schultz and the circumstances and extent of his injuries, letter of Lewis M. Farrington, Assistant Secretary of the State Hospital, dated July 11, 1921, copy of letter of G. A. Smith, Superintendent, dated July 1, 1921, and original letter of the Attorney-General, dated July 20, 1921.

With all the facts before me, I am of the opinion that it is legal to carry said Schultz on the payroll and to pay him as special attendant in the carpenter shop in the Central Islip State Hospital, while he is at the same time receiving compensation awarded him by the Industrial Commission for the loss of a part of his first, second and third fingers of his right hand, due to an accident while working in the carpenter shop of the said hospital. This conclusion is based upon the assumption that the employee must be qualified to do the work assigned to him and is actually doing satisfactory work, otherwise he would not be continued by the superintendent of the hospital.

He cannot be said "to be on two payrolls at the same time," as is suggested in the letter of Superintendent Smith, dated July 1, 1921.

The compensation he is receiving because of his injury can hardly be called pay or wages. It is compensation, an award granted according to law for serious injury and loss. It might be said to be in the same category as a judgment that might have been recovered against the State.

I might add that in my opinion his injury is a permanent one, since his fingers cannot be restored to their former condition and usefulness.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(i) Award is Permissible for Temporary Total or Permanent Partial Disability but Not for Both; Computation (§ 15, subds. 2 and 3).

NORWICH, N. Y., *October* 29, 1921.

OFFICE OF THE ATTORNEY-GENERAL, *Albany, N. Y.:*

DEAR SIRS.— I understand that your office has a branch which takes care of cases arising under the Workmen's Compensation Law, and is kept posted on the decisions and ruling under same. I am representing an injured employee, who has questions involved upon which I can find no ruling. I am stating the questions involved, and would ask that you refer me to decisions upon them, or rulings, or, if none, your opinion.

1. Employee has 50 per cent loss of use of leg and 25 per cent loss of use of an arm. Is he entitled to an award of 75 per cent for the period of the shorter period for a leg and of 25 per cent. for the difference between a leg and arm?

2. Where his wages exceed the maximum ($50 to $60 per week), is he entitled on a 75 per cent loss of use, to 75 per cent of two-thirds of his wage up to $20 per week?

3. Employee had a total temporary disability for one year, from injury to his back, in the same accident. When does the award for the leg and arm commence to run; date of injury or date of end of temporary disability, and in case the loss of arm and leg is less than the maximum, does the maximum paid under the total temporary disability reduce the amount due on the award for the arm and leg.

The figures stated herein are estimated, but the situation is an actual situation, and I shall appreciate your advice.

Very truly yours,
FRANK W. BARNES.

October 31, 1921.

FRANK W. BARNES, ESQ., *Norwich, N. Y.:*

DEAR SIR.— In reply to your letter of the 29th inst., would say that the Court of Appeals has held that where a man loses a leg or an arm or other specific member, and also is temporarily disabled, there cannot be concurrent awards, and that if the award for the specific member extends beyond the temporary disability, i. e., in the number of weeks, that there can be no recovery for the temporary disability (*Markoffer* v. *Markoffer*, 220 N. Y. 543). If the employee's wages exceed the maximum, as stated by you ($50 or $60 a week), the claimant is entitled to the maximum of $20 per week, and if he has lost 50 per cent of the use of the leg and 25 per cent of the use of the arm, he would be entitled to 50 per cent of the loss of the leg, or 144 weeks, and also 25 per cent of the loss of the arm, or 78 weeks.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

NORWICH, N. Y., *November* 1, 1921.

ATTORNEY-GENERAL, *Albany, N. Y.:*

DEAR SIRS.— I thank you for your kind letter of October 31, touching Workmen's Compensation decisions, and I thank you for your reference to *Marhoffer* v. *Marhoffer*.

Your letter seems to indicate, but possibly not fully considered, the following points, and I am taking the liberty to bother you further.

1. Is it not possible for the commission to award a 50 per cent loss of use of a leg, by awarding 50 per cent of two-thirds of the weekly wage for a period of 288 weeks, but not over $20 per week; instead of the maximum amount for 50 per cent of the weeks. This would nearly double the award in this case. For employee received nearly $60 per week, and 50 per cent of two-thirds of that amount would be nearly $20 for 288 weeks. If there is any decision or ruling on this point, would you kindly advise me.

2. Would employee be entitled to consecutive awards, for 144 weeks for 50 per cent loss of use of leg, and for additional 78 weeks for 25 per cent loss of use of arm, making a total of the maximum of $20 per week for 222 weeks for both? (in case the above question is answered in the negative).

3. In the Marhoffer case, the temporary total disability was the result of the loss of the hand, which was the same hand for which awarded partial permanent disability. Near the top of page 546, the court says "The provisions in paragraph 3 of section 15, * * * does not by its terms exclude compensation for other injuries as defined in other paragraphs." In this case, the total temporary disability is *outside* of the injury to the leg and arm (principally) and is an injury to the back, and awards have been made for total temporary disability for the period of over a year, on account of injury to back. Would an award for the arm and leg at this time, come under that decision (*Marhoffer* v. *Marhoffer*), and be partially off-set by the awards for the back, already made.

I again thank you for your interest shown, and shall be glad to hear from you again upon these points. I realize that my former letter did not state sufficient facts to bring out the points which are involved.

Very truly yours,
FRANK W. BARNES.

November 2, 1921.

FRANK W. BARNES, *Norwich, N. Y.*

DEAR SIR.—In reply to yours of the 1st inst., would say that the Appellate Division attempted to do what you indicate in your first question in the case of *Phonville* v. *New York & Cuba S. S. Co.*, but this was reversed by the Court of Appeals (226 N. Y. Rep. 618, 622).

As to your second point, I think that the awards where there is 50 per cent. loss of the use of the leg and 25 per cent. loss of the use of the arm would be consecutive awards.

As to your third point, I am not entirely clear whether a total temporary disability for some injury outside of injury to arm and leg could be compensated. I am inclined to think not, but that would be subject to the decision of the Appellate Division and Court of Appeals. I am quite sure, however, if the temporary total disability exceeds the number of weeks for the award for the loss of specific members that an award could be made for the temporary total disability.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(j) A County Board Should Levy Compensation Solely upon the Town, Village or City Whose Employee Has Incurred Injury (§ 35).*

March 29, 1921.

EARNEST C. HORNBURG, ESQ., *Frick Building, Wellsville, N. Y.*

DEAR SIR.— In reply to yours of the 28th inst., would say that section 35 of the Workmen's Compensation Law is not entirely clear as to its meaning and possibly might be interpreted as allowing the county to raise money from the county for the purpose of paying claims against towns and villages for compensation of workmen employed by them. However, we must interpret the section in question with reference to the other provisions of the law, and especially of the County Law. The County Law (sec. 12, subds. 2, 3, and 4) provides:

"2. Audit all accounts and charges against the county, and direct annually the raising of sums necessary to defray them in full.

3. Annually direct the raising of such sums in each town as shall be necessary to pay its town charges.

4. Cause to be assessed, levied and collected, such other assessments and taxes as shall be required of them by any law of the state."

These provisions assumed that accounts and charges against the county shall be raised by the county while those against the town shall be raised in the towns, and read in connection with the County Law it seems to me that the interpretation to be placed upon section 35 in question should be that each municipality, town, county and village shall pay its own charges so far as compensation is concerned; and that section 35, so far as the county is concerned, authorized the county to take action through its board of supervisors in adopting a general tax system for the county and other municipalities in the county. Any other interpretation might run counter to section 10 of article VIII of the New York State Constitution, which provides:

"Nor shall any such county, city, town or village be allowed to incur any indebtedness except for county, city, town or village purposes."

This has been interpreted in the case of *Deady* v. *Village of Lyons*, 39 App. Div. 139, as a prohibition against a village raising money by taxation to provide for the making of additions and repairs to the court house in the county of Wayne. The opinion of the referee in that case, which was adopted by the Appellate Division and is printed in the report above mentioned, holds that the article of the Constitution in question prohibited a gift to a corporation even when the corporation was the county of Wayne.

I think, therefore, that where the taxation system is adopted under section 35 that the amounts paid therefor should be charged against the town, county, city or village whose employee was granted compensation.

If the village operates an electric light and water system, I am of the opinion that the employees engaged therein would be covered by the Workmen's Compensation Law.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

CIVIL SERVICE LAW

A. PROBATIONARY APPOINTEES

(a) In Absence of Rule Fixing Probationary Term of Non-competitive or Exempt Appointee, Appointing Officer May Fix Such Term; He May Drop Appointee Without Hearing (§§ 9, 22).

INQUIRY

Shortly before January 1, 1921, the Superintendent of Public Buildings appointed certain veterans of the World War to positions as laborers in the Department of Public Buildings. The term of office of the Superintendent of Public Buildings expired and the new superintendent was appointed on January 1, 1921. The outgoing superintendent did not fix any probationary terms for the laborers so appointed. May their probationary terms be fixed by the new superintendent? What are their rights under section 22 of the Civil Service Law as amended by chapter 833 of the Laws of 1920?

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* For a like opinion see Report of Industrial Commission for 1920, p. 270. Under L. 1922, ch. 615, this § 35, amended radically, has become § 50, subd. 4.

OPINION

The first Civil Service Law enacted in this State was passed in 1883. The first Civil Service Commission was appointed by Governor Cleveland in the same year. And among the first rules it promulgated (approved by the Governor December 6, 1883) was one reading as follows:

> Rule XL.
>
> Every original appointment or employment in the civil service shall be for a probationary term of three months, at the end of which time, if the conduct and capacity of the person appointed or employed shall have been satisfactory, the probationer shall be absolutely appointed or employed, but otherwise his employment shall cease.
>
> Every officer under whom any probationer shall serve during any part of such probation shall carefully observe the quality and value of the service rendered by such probationer, and shall report in writing, to the proper appointing officer, the facts observed by him, showing the character and qualifications of such probationer and of the service performed by him; and such reports shall be preserved on file.

Thus, at the very inception of civil service reform in this State, one of the principles adopted was the test of merit and fitness by a probationary term in all cases. The rule applied to everybody over whom the commission had jurisdiction, including everybody now in the "classified service." At that time the classified service was divided into four classes designated A, B, C, and D. But the rule applied to all. In the classes in which examinations were required, the probationary term constituted an additional test of merit and fitness.

This was before there was any "Veteran Act."

In 1884 the first Veteran Act was passed, and the Civil Service Law was amended to accord certain special privileges to veterans of the Civil War. But the rule about probationary appointments remained unchanged. And it remained unchanged in substance when the Veteran Act was amended in 1892 to cover volunteer firemen and when the civil service principles were put into the Constitution in 1894 — and until the first consolidation of the Civil Service Laws in 1899, when it was made a part of the consolidated statute.

The purpose and effect of the rule and of similar rules made by municipal civil service commissions were considered by the courts in many cases, and are well settled. The purposes was explained by the Court of Appeals in *Kastor* v. *Kearny*, 164 N. Y., 64, as follows:

> The object of the probationary period is to enable the head of the department not only to ascertain the fitness of the probationer but to learn whether on the whole he is a satisfactory and agreeable person to have serve in the office and one who will become a reasonably efficient officer.

The effect of the rule was to divide an employment into two separate and distinct terms; the first probationary, the second permanent. Judge Gaynor, reading for a unanimous Appellate Division in *People ex rel. Archer* v. *McAdoo*, 110 A. D. 740 (affirmed, 184 N. Y. 575), said:

> The effect of these provisions is to make the probation period a separate and distinct term, the statute using that very word. It does not run into and become part of the permanent tenure. It ends and there is then an appointment to the permanent tenure. The Municipal Civil Service rule provides that a failure of the appointing officer to

> notify the probationer during his probationary term that he will not be retained 'shall be equivalent to permanent appointment.' This does not destroy the separate identity of the probation term and the necessity for an appointment to the permanent tenure. On the contrary, the rule intends such an appointment and provides for an 'equivalent' of a formal appointment. The effect is the same as though a formal appointment were made indispensable.

The effect of the rule upon veterans protected against removal for cause except after a hearing upon charges, was to make it possible for an appointing officer to dispense with their services at the end of the probationary period without any hearing — in other words their veterancy did not entitle them to reappointment after the expiration of their probationary terms. In *People ex rel. Hoeges* v. *Guilfoyle*, 61 A. D. 187, it was held that even a veteran of the Civil War could be removed without trial or hearing, at the end of his probationary term. This was before the Civil Service Law excepted Civil War Veterans from the requirement that all appointments be probationary. There have been a number of cases in New York City and the counties contained therein where competitive employees are not subject to removal without an opportunity to explain, the courts always holding that while they could not be removed without such opportunity before or after the expiration of the probationary term, they could be so removed at the expiration of the probationary term. *People ex rel. Walter* v. *Woods*, 168 A. D. 3; *People ex rel. Holston* v. *Woods*, 167 A. D. 899; *People ex rel. Schlesinger* v. *De Forest*, 83 A. D. 410; People ex rel. *Looram* v. *Henderson*, 77 Misc. 25; *People ex rel. White* v. *Color*, 56 A. D. 171; *Matter of Dalton* v. *Darlington*, 123 A. D. 855.

The rule is the same as in the case of a veteran appointed to office for a definite term of years Unless he is a veteran of the Civil War, who was entitled as of right to an original appointment, he is not entitled as of right to a re-appointment. In other words, veterancy does not entitle an officer to hold over after his term has expired. (*In re Tiffany*, 179 N. Y. 455; *Williams* v. *Darling*, 67 Misc. 205.)

In 1899 the various civil service statutes and veteran acts which had been enacted since 1883, together with many provisions which had appeared only in the rules, were combined in one Consolidated Civil Service Law. (L. 1899, c. 370.) Section 8 of that act (which corresponds to section 9 of the present Civil Service Law), defined the unclassified and classified services in the same way that they are defined today and added:

> All appointments or employments in the classified service shall be for a probationary term not exceeding the time fixed in the rules.

Thus the long-established rule was made a part of the statute, with this change — before 1899 the provisional appointments were all for three months exactly. Afterward it was different. Previously, when an appointing officer notified a subordinate of his appointment, it did not matter whether he indicated that it was a three-months term, as required by the rule, for the rule limited his power of appointment in the first instance, and the appointee would only be entitled to serve three months anyhow, unless kept on afterward. The statute was obviously drawn in contemplation of the existing rules but with intent to modify them. Instead of allowing the Civil Service Commission in its rules to fix the probationary term, the law permitted it to fix only a maximum, leaving it to the appointing officer to fix the actual probationary term in each case, not to exceed the maximum fixed by the rules.

The rule theretofore had always applied to all positions "in the civil service" — but the Commission had no jurisdiction over the unclassified service, so in effect the rule applied to the entire classified service. The statute contemplating the continuance of the same or some similar rule, provided for probationary appointments to all positions in the classified service. But the Commission, in making rules to conform to the amended statute, fixed a maximum term of probationary appointment for positions in the competitive class only. The reason for this was probably that they believed that in the exempt and non-competitive classes the appointing officers should have unqualified power to remove even veterans, and by not limiting the probationary term they would make it possible for appointing officers to retain indefinitely the power to remove veterans in those classes — for section 21 (now section 22) of the statute at that time provided:

> A person serving under a probationary or provisional appointment shall not be deemed to be holding a position within the meaning of this section.

This language remained in the law only three years, being eliminated by Laws 1902, chapter 270, which statute also excluded Civil War Veterans from the requirements of section 8 that all appointments be provisional. The amendment of 1902 was not followed by any corresponding amendment of the civil service rules. The rule continued to limit the term of probationary appointments only in the competitive class. And as the rule stands today it provides:

(Rule XII, Paragraph 1)

> Except in the case of veterans of the Civil War, honorably discharged from the military or naval service of the United States, every original appointment to or employment in any position *in the competitive class* shall be for a probationary term of three months, and an appointing or nominating officer in notifying a person certified to him for appointment or employment shall specify the same as for a probationary term only; and if the conduct, capacity and fitness of the probationer are satisfactory to the appointing officer, his retention in the service after the end of such term shall be equivalent to his permanent appointment, but if his conduct, capacity or fitness be not satisfactory he may be discharged at the end of such term.
>
> Whenever two or more persons appointed from the same eligible list are serving as probationers in the same department, and there is necessity for a reduction of the force of such department affecting such persons, they shall be preferred for retention in the order of their original standing upon such list.

The statute says all appointments in the classified service shall be for a probationary term, leaving it to the rules to fix the maximum length of that term. The rules fail to fix any term in the non-competitive and exempt classes. What is the result? Certainly the Civil Service Commission cannot defeat the absolute mandate of the statute by neglecting to fix a maximum. The appointing officer is not only entitled to make a probationary appointment in order to judge whether he wishes to make a permanent appointment, but he is required by law to do so. The failure of the civil service rules to fix a maximum cannot defeat the right or the duty of the appointing officer. In the absence of any maximum fixed by the rules the appointing officer may make the probationary term as long or as short as he pleases.

But the statute absolutely requires a probationary term.

Where an appointing officer makes an appointment without designating the length of the probationary term, one of three things must be the result: either (1) he thereby defeats the statute, or (2) his appointment is void, or (3) he is still at liberty to fix the duration of the probationary term. I cannot concede that the appointing officer by neglecting a duty can repeal a mandatory statute. On the other hand, the fixing of the probationary term being only one of many formalities, surrounding an appointment, its omission, to my mind, does not necessarily render the appointment void *ab initio* — at least the appointee becomes a *de facto* officer or employee. So it must be that the appointing officer retains the right (and duty) to fix the probationary term until he exercises it.

The office of Superintendent of Public Buildings is a continuing one, so the fact that there has been a change in the incumbent of the office makes no difference. I believe that when an appointing officer has once fixed a probationary term under section 9 of the Civil Service Law, he is *functus* *officio* and cannot change it; but until he does fix it he retains the right and remains under a duty to fix it.

I therefore advise you that in my opinion you are at liberty to fix the probationary term of employees, appointed by your predecessor just before his retirement, in those cases where he did not fix it. And I advise you that it is in your discretion to retain such appointees after the expiration of their probationary terms, or to let them go. Failure to give notice, prior to or at the end of the probationary term, to any you wish to drop, will probably be equivalent to a permanent appointment, so notice should be given to any of them whom you determine to be unfit or unsatisfactory.

There is no probationary term in the case of Civil War Veterans, but in the case of any other person protected by section 22 of the Civil Service Law, that statute does not require that he be given a hearing, on charges, etc., before being refused a permanent appointment at the end of his probationary term.

Dated, *February* 21, 1921.

CHARLES D. NEWTON,
Attorney-General.

To HON. OTTO JANTZ, *Superintendent of Public Buildings, Albany, N. Y.*

B. WAR VETERANS *

(a) Provision Pensioning Civil War Veterans at One-half Salary is Retroactive; Maintenance Counts (§ 21-a).

The fiscal supervisor asks for an opinion as to the application of section 21-a of the Civil Service Law to certain situations existing in your department with reference to retirement and pensions.

Section 21-a originally read as follows:

> *Section* 21-*a. Retiring Veterans of the late Civil War and granting them pensions.* Every soldier, sailor or marine of the army or navy of the United States in the late civil war, honorably discharged from service, who shall have been employed for a continuous period of ten years or more in the *civil service* of the state of New York, and who shall have reached the age of seventy years, upon his own request, or if employed in manual labor, upon becoming incapacitated for performing manual labor, shall be retired from his employment by the state of New York, and thereafter and during his life, the state department or institution which employed him at the time of his retirement, shall pay to him, in the same manner that the salary or wages of his former position were customarily paid to him, an annual sum equal in amount to one-half the salary or wages paid to him in the last year of his employment; provided, however, that the amount so to be paid to such retired veteran shall not exceed the sum of one thousand dollars per annum.

It will be noted that the amount of the pension to be paid in any case shall not exceed the sum of one thousand dollars.

Chapter 751 of the Laws of 1920 amended such section by omitting the words, "provided, however, that the amount so to be paid to such retired veteran shall not exceed the sum of one thousand dollars per annum." This resulted in the removal of the maximum amount which might be paid to any retired veteran under this section. Chapter 54 of the Laws of 1921 further amended such section by adding, "The state department or institution which employed a soldier, sailor or marine, who shall have been retired from said employment under the provisions of this section prior to May twelfth, nineteen hundred and twenty, shall pay to him in the manner above specified, during his life, an annual sum, from and after said twelfth day of May, nineteen hundred and twenty, equal in amount to one-half the salary or wages paid to him in the last year of his employment."

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* See also Opinion relative to Retirement Pensions under § 19a of the Military Law, below, page 258.

Specifically answering your questions:

As to 1. I am of the opinion that chapter 54 of the Laws of 1921 is retroactive with respect to employees of your department retired under section 21-a of the Civil Service Law prior to May 12, 1920, and they are entitled to an increase in pension as provided for under chapter 54 dating back to May 12, 1920.

As to 2. I am of the opinion that chapter 54 of the Laws of 1921 is retroactive with respect to employees of your department retired under section 21-a of the Civil Service Law, subsequent to May 12, 1920, and they are entitled to an increase in their pension as provided for in said chapter 54 dating back only to the time of their retirement.

As to 3. In computing the amount of pension granted under section 21-a of the Civil Service Law, maintenance allowed to the retired officers or employees during the last year of such employment should be taken into consideration in determining the salary paid. (See Opinion of Attorney-General, 1916, page 281.)

In arriving at the amount to be allowed for maintenance, you should be guided by schedule rate allowed as and for commutation in lieu of maintenance in your department. You would not be controlled by the rules fixed by the Comptroller under the employee's retirement system.

June 23, 1921.

CHARLES D. NEWTON,
Attorney-General.

To FRANK R. UTTER, *State Fiscal Supervisor.*

(b) Ten Years Continuous Service is Prerequisite to Retirement of Civil War Veteran under Seventy-five (§ 21-a).

Request is made for an interpretation of chapter 768 of the Laws of 1917, with reference to your right to be retired on a pension under said Act.

Chapter 768 of the Laws of 1917, which amended section 21-a of the Civil Service Law, is as follows:

> § 21-*a*. *Retiring Veterans of The Late Civil War and Granting Them Pensions.* Every soldier, sailor or marine of the army or navy of the United States in the late civil war honorably discharged from service *who shall have been employed for a continuous period of ten years or more* in the civil service of the State of New York and the several cities and counties thereof and who shall have reached the age of seventy years upon his own request, or if employed in manual labor upon being incapacitated for performing manual labor, shall be retired from his employment by the State of New York and the several cities and counties thereof, and thereafter and during his life the State department or institution and the several cities and counties which employed him at the time of his retirement shall pay to him in the same manner that the salary or wages of his former position were customarily paid to him *an annual sum equal in amount to one-half the salary or wages paid to him in the last year of his employment; provided, however, that the amount so to be paid to such retired veteran shall not exceed the sum of one thousand dollars per annum.*
>
> Section 2. This act shall take effect immediately.

Chapter 54 of the Laws of 1921 further amended said section among other ways by omitting the words "provided, however, that the amount so to be paid to such retired veteran shall not exceed the sum of one thousand dollars per annum." This resulted in the elimination of the maximum amount which might be paid to any veteran retired under this section as amended.

The particular feature of this article of the Civil Service Law, about which you are concerned is the requirement of *employment for a continuous period of ten years or more in the civil service* of the State of New York, and of the several cities and counties thereof.

I am of the opinion that in order to entitle you to be retired under section 21-a of the Civil Service Law, as amended, you must have been employed for a *continuous period of at least ten years* in the civil service of the State of New York or some city or county thereof.

This continuous service of at least ten years is an absolutely necessary condition precedent to your right to retirement, and until you complete such ten years of continuous service, you could not legally be retired.

In your letter you state that you entered upon your present position on September 1, 1912. Were you immediately preceding this appointment in the civil service of the State or of any city or county? If you were in such service and there was no interruption between that service and your service in your present position, a different conclusion might be reached.

December 8, 1921.

CHARLES D. NEWTON,
Attorney-General.

To JOHN H. FOREY, *Syracuse, N. Y.*

(c) No Fixed Period of Service is Prerequisite to Retirement of Civil War Veteran over Seventy-five; Entry upon Service (§ 21-b).*

September 28, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.*

DEAR SIR.— I acknowledge receipt of your letter dated September 9th but received at this office September 19th asking for an opinion with relation to § 21-b of the Civil Service Law as added by chapter 159 of the Laws of 1921.

You state the following facts and ask the following questions:

" The case in point is a veteran, 82 years old and has been employed by the state but 5 years. He was, therefore, over 75 years when appointed. Will you kindly give this Department your opinion as follows:

1st. Is the applicant for retirement entitled to the benefits of this Act if he has not been employed for 10 years by the State?

2nd. If he is entitled to retirement on employment of less than 10 years, how short a term of employment will entitle him to retirement?

3rd. As the Act makes an employee eligible to retirement after he has reached the age of 75 years, does the fact that he entered the employ of the State after the age of 75 have any bearing on the question? "

Section 21-b reads as follows:

> § 21-b. Retiring veterans of the late civil war and granting them pensions. Every soldier, sailor or marine of the army or navy of the United States in the late civil war honorably discharged from service seventy-five years of age or older employed by the state of New York shall, upon becoming incapacitated by accident, illness or age for performing the duties assigned to him, be retired from such employment by the state of New York and thereafter and during his life said department in which he was employed shall pay to him in the same manner that the salary or wages of his former position were customarily paid to him an annual sum equal in amount to one-half the salary or wages paid to him in the last year of his employment; provided, however, that the amount so to be paid to such retired veteran shall not exceed the sum of one thousand dollars per annum, unless such retired veteran shall have been employed by the state for a period of at least ten years before his retirement and is retired pursuant to the provisions of section twenty-one-a of this chapter.

You also call my attention to § 21-a of the Civil Service Law which has been amended by chapter 54 of the Laws of 1921. That section refers to Civil War veterans in State or municipal service for a continuous period of ten years or more who shall have reached the age of 70 years. Section

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* This § 21-b, added by L. 1921, ch. 159, should be distinguished from the section with the same number added by L. 1921, ch. 702, and subject of the two opinions immediately following.

21-b refers to Civil War veterans 75 years of age or older, in the State service. These sections do not seem to be in conflict with each other.

In answer to your questions I would say it is my opinion that the veteran in question may be retired if incapacitated by accident, illness or age for performing the duties assigned to him even though he was over 75 years of age when appointed and that his employment has been for but five years. Chapter 159 fixes no minimum term of employment and I am not prepared to state how short a term of employment would entitle such a person to retirement. Apparently a very short term of employment would be sufficient provided it were not a subterfuge for the purpose of taking advantage of the act. The pension to the veteran in question cannot exceed the sum of $1,000 per year for the reason that he has neither been employed by the State for a period of ten years nor is he retired under the provisions of § 21-a.

The intent of § 21-b, broadly speaking, seems to be when read in connection with § 21-a that all Civil War veterans shall be retired upon a pension when incapacitated, regardless of length of service or time of entry therein.

Very truly yours,

CHARLES D. NEWTON,
Attorney-General.

(d) World War Veterans Must Have Served Prior to November 11, 1918; When Preference and Service Credit Effective (§ 21-b).*

The period of "actual warfare" in the World War ceased on November 11, 1918.

Subdivision (d) of § 21-b of the Civil Service Law provides that a veteran shall be preferred in original appointment over other persons standing on the list with equal rating. This carries with it a preference over those having lower ratings.

The provisions of subdivisions (c) and (d) of § 21-b of the Civil Service Law apply to appointments made after May 13, 1921, regardless of when examinations were held or lists established, but the provisions of subdivision (e) only apply to examinations held after May 13, 1921.

INQUIRY.

Section 21-b was added to the Civil Service Law by chapter 702 of the Laws of 1921, in effect May 13, 1921. The Civil Service Commission requests advice upon the following points:

1. Time of termination of period of actual warfare in the World War. Can this time be fixed as November 11, 1918, or is the period still open?

2. In subdivision (d) it is provided that a veteran shall be preferred in original appointment over other persons eligible for such appointment and standing on the list therefor with a rating equal to that of such veteran. Is this language to be interpreted as applying only to candidates whose general average is exactly the same, or does it mean that the veteran preferred over all other candidates with a rating equal to or lower than that of the veteran?

3. Do the provisions of the law apply to examinations held and lists established prior to May 13, 1921?

4. Do the provisions of the law apply to examinations held prior to May 13, 1921, the lists resulting from which have not as yet been established?

OPINION.

1. Section 21-b of the Civil Service Law as added by chapter 702 of the Laws of 1921, in defining "veteran" for the purposes of the section, provides:

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* This § 21-b added by L. 1921, ch. 702, should be distinguished from the section with the same number added by L. 1921, ch. 159, and subject of the opinion immediately above. This opinion should be read in connection with the later opinion following.

> (a) The word "veteran," when used in this section, shall mean and include any person, male or female, who, being a resident of this State at the time of induction into the service, served in the army, navy or marine corps of the United States within the period of actual warfare in time of war, or who, being a resident of this State and a citizen of the United States at the time of induction into such service, served within the period of actual warfare in the world war in the military or naval service of any nation associated with the United States in such war and has received an honorable discharge or relief from such service; but shall not include any person who refused so to serve after a final decision of the proper military authorities requiring such service.

We have had many statutes referring to the World War and to the termination of the war, and under them it has generally been held that the war did not terminate with the signing of the armistice, since a technical state of war still existed between the United States and Germany and American troops remained in France and Germany thereafter. But in this statute we find a new phrase: "Within the period of actual warfare." This is clearly intended to mean something different from the phrases used in other statutes. It was clearly the intention of the Legislature to exclude from the benefits persons who joined the United States Army say in January, 1921, while a technical state of war still existed between this country and Germany. A similar restriction is found in the Soldiers' Bonus Law (Laws 1920, chapter 872). These bonuses are provided for persons who served in the military or naval service of the United States at any time between April 6, 1917, and November 11, 1918. I believe that that is the period the Legislature had in mind when it said "the period of actual warfare" in the World War.

It is to be noted that the privileges extend to veterans of the World War who fought under the flags of the nations who were associated with the United States as well as those who fought under the American flag.

As to other wars, only those who served in the army, navy or marine corps of the United States within the period of actual warfare in time of war, are entitled to be considered as "veterans" within the meaning of this section.

In every case the veteran must, of course, possess all the other qualifications stipulated in the statute.

2. Subdivision (d) of the section provides in part:

> (d) Every veteran shall be entitled to preference in original appointment to all competitive positions in the civil service of the State and the civil divisions thereof over all other persons eligible for such appointment and standing on the list therefor with a rating equal to that of such veteran.

In my opinion the Legislature undoubtedly intended to grant a preference by this language over all other persons who do not stand higher upon the list. It is extremely rare that two candidates receive exactly the same rating on a civil service competitive list, and the grant of a preference over those holding exactly the same rating, without including in it a preference over those rated lower, would avail the veteran nothing. For example: If A, a veteran, and B, a non-veteran, had ratings exactly alike, say 81, and C, also a non-veteran, had a rating of 80 and the Civil Service Commission certified to the appointing officer the names of A, B and C, it would be obviously absurd to say that the appointing officer cannot choose B because A has a preference over him, but can choose C because A has no preference over him. If A is entitled to a preference over B, he surely ought to be entitled to a preference over C.

3–4. Subdivisions (c) and (d) of the section provide that veterans shall be entitled to specified preferences in appointment to certain civil service positions over other persons standing on the lists. There is nothing to indicate that the section is not intended to apply to existing lists and the act, by its terms, is to take effect immediately. I am, therefore, of the opinion that the rules with respect to preference should be applied to appointments from lists existing at the time of the passage of the act, and also to lists made up after the passage of the act as the result of examinations held theretofore.

Subdivision (e) of the section provides that in all examinations for original appointment certain credit shall be given. There is nothing in the statute to indicate any intention to have it retroactive in any respect, and it is a well accepted rule of statutory construction that statutes will not be deemed retroactive in the absence of an unmistakable legislative intent to that effect. I am, therefore, of the opinion that, with respect to examinations held before the passage of this act, the Civil Service Commission is under no obligation to give the credits provided for in subdivision (e) of the section, whether or not the ratings had been made before the passage of the act.

My opinion has not been requested with respect to the constitutionality of any part of this statute, and I have considered no constitutional questions in arriving at the conclusions above stated.

Dated *May* 18, 1921.

CHARLES D. NEWTON,
Attorney-General.

To the State Civil Service Commission, *Capitol, Albany, N. Y.*

(e) Preference of Disabled Veterans is Unconstitutional; Preference in Certification Only; Service Credit (§ 21-b).*

INQUIRY

To what extent is section 21-b of the Civil Service Law, added by chapter 702 of the Laws of 1921, in conflict with the Constitution, and to what extent is it operative?

OPINION

On May 18, 1921, I rendered an opinion, at the request of the Civil Service Commission, upon the construction of section 21-b of the Civil Service Law as added by chapter 702 of the Laws of 1921. I closed that opinion with the words: "My opinion has not been requested with respect to the constitutionality of any part of this statute, and I have considered no constitutional questions in arriving at the conclusions above stated."

On July 13, 1921, the Court of Appeals decided the case entitled "*Matter of Barthelmess et al.* v. *Cukor et al.*" The opinion in that case, *per* Judge Cardozo, contains an elaborate exposition of the purpose and effect of section 9 of Article V of the Constitution of New York, which provides:

> Civil service appointments and promotions.— Section 9. Appointments and promotions in the civil service of the State and of all the civil divisions thereof, including cities and villages, shall be made according to merit and fitness to be ascertained, so far as practicable, by examinations, which, so far as practicable, shall be competitive; provided, however, that honorably discharged soldiers and sailors from the army and navy of the United States in the late Civil War, who are citizens and residents of this State, shall be entitled to preference in appointment and promotion, without regard to their standing on any list from which such appointment or promotion may be made. Laws shall be made to provide for the enforcement of this section.

The court held that the statute then under consideration (Military Law, sections 245, paragraph 7, as amended by L. 1920, ch. 282), violated the constitutional provision in attempting to grant a preference in promotions in the civil service to a class, other than veterans of the Civil War, which preference was not based upon merit and fitness determined by competitive examination, in cases in which competitive examination was practicable.

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* This opinion may be read in connection with the earlier opinion preceding.

The opinion settles, beyond any possibility of argument, that service in the armed forces of the United States, other than service in the Civil War, cannot, of *itself*, be made the ground for preference in appointment or promotion in the civil service of the State, its subdivisions or municipalities, where it is practicable to test merit and fitness by examination.

The opinion in the Barthelmess case absolutely controls us in considering the effect of section 21-b of the Civil Service Law as added by L. 1921, ch. 702. This statute is divided into four paragraphs:

Paragraph "a" defines the word "veteran" as including those residents of New York who served in specified manner in the forces of the United States in time of war, or who served in specified manner with a nation associated with the United States in the World War.

Paragraph "b" defines a "*disabled veteran*" as a veteran found (by the department of health) to have been disabled in one of divers enumerated respects.

(1) Paragraph "c" provides:

> (c) Every disabled veteran shall be entitled to preference in original appointment without regard to his standing on any list from which such appointment may be made, to all competitive positions in the civil service of the State and the civil divisions thereof, provided his qualifications and fitness shall have been ascertained as provided in this chapter and the rules and regulations made in pursuance thereof; and a person so preferred shall not be disqualified from holding any position in such service on account of his age or disability, provided such age or disability does not render him incompetent to perform the duties of the position.

This provision might well have been the subject of the following language in the opinion of the Court of Appeals referred to:

> This statute is not an estimate of capacity. It is the expression of a preference. The Legislature has not said that the test of competitive examination is impracticable, no matter what the position, whenever soldiers or sailors are among the candidates for promotion. It has said, in effect, that even though the test of competitive examination be practicable, soldiers and sailors shall be eligible in advance of others. The statute was so construed at the Appellate Division, and its entire scheme and framework exclude another meaning. Mere entrance into army or navy, and that whether voluntary or involuntary, is made sufficient for preferment. Neither the kind nor the quality or the duration of the service is important. There is not even the requirement of an honorable discharge. Service for a month or a day as cook or as hostler counts as much as service throughout the war, and the winning of a cross of honor. The preference is not confined to callings or positions where efficiency might be thought to be promoted by the discipline of camp or ship. The clerk or the bookkeeper is subjected to the same tests as the policeman or fireman.

The court held that the statute violated the constitutional provision. And it is obvious that the act now under consideration is equally invalid.

The mere fact that the preferences in paragraph "c" are limited to "disabled" veterans, does not cure it. Mere physical disability, even though incurred in the line of military duty, does not increase a man's merit or fitness for civil office. If anything, its tendency would be the opposite. And the preference is not even limited to those suffering from "honorable scars." It applies equally to those suffering from disgraceful diseases which could not have been contracted in the line of duty.

The court said:

> The discipline of army or navy, to justify this exaltation of its significance, must bear something more than a remote or fanciful relation to the duties of office or employment.

The same is equally true of a disability incurred during military service. The loss of a leg does not necessarily make a man a worse clerk or stenographer than the next one, but it certainly does not, of itself, make him a better one.

As the court said of the other statute:

> The condemnation of the act is written in the Constitution in words too plain to be misread.

I conclude that paragraph "c" of the statute is unconstitutional in its entirety, for the last part of it, prohibiting disqualification, only applies to persons "so *preferred.*"

(2) Paragraph "d" of the section under consideration provides:

> Every veteran shall be entitled to preference in original appointment to all competitive positions in the civil service of the State and the civil divisions thereof over all other persons eligible for such appointment and standing on the list therefor with a rating equal to that of such veteran.

No attempt is made here to prefer "veterans" in appointment over those standing higher upon the list, so it cannot be said that the "merit and fitness" rule of the Constitution is violated. In my opinion of May 18th, I held that preference over those standing with equal rating on the list carried with it a preference over those with lower rating. And the effect of this would be that if a veteran's name were first among three, certified by the civil service commission as eligible for appointment, he must be chosen by the appointing officer. As I have noted above, in preparing that opinion I considered merely the interpretation of the statute, as it stood, without reference to the Constitution. But now I am asked for advice upon the constitutionality of the act, and must go farther. Another section of the Constitution intervenes. The Court of Appeals mentions it in the Barthelmess case, saying:

> Nothing in *People ex rel. Balcom* v. *Mosher*, 163 N. Y., 32, is authority for these bizarre conclusions. We construed the civil service section of the Constitution in the light of another section (Art. 10, sec. 2) which says that local officers shall be chosen by the local authorities. We said that this implied some privilege of selection on the part of the public officer who was to exercise the appointing power. The Legislature might require him to make a choice among the three highest on the list, but could not exclude judgment altogether by restricting him to the one that was highest of the three.

Paragraph "d," interpreted according to my former opinion, would have the effect of restricting the power of appointment in violation of article X, section 2, of the Constitution. That section applies only to appointments in counties, towns, villages, and cities. The rule does not necessarily apply to the State service. But the paragraph of the statute was obviously intended to apply equally to the State and to its civil divisions. I cannot believe that the Legislature intended one rule for the State government, and another for the counties and villages — the law controlling which is administered by the same State Civil Service Commission — or for the cities, even though they have separate municipal commissions. After the Court of Appeals, in the Balcom case, held a section of the Civil Service Law void as against cities, the Legislature proceeded to repeal it in its entirety. It was not left upon the books to tie the hands of State officers in a manner in which those of local officers could not be tied. Here, too, I believe the Legislature intended the same rule for all, and the paragraph should be held to mean the same for the State as for the localities.

There is a possible construction of paragraph "d," which is not in conflict with the Constitution. It is our duty, under the well established rules of statutory interpretation, to adopt this construction. The statute grants to the veteran a preference "over all other persons eligible for such appointment and standing on the list thereof with a rating equal to that of such veteran." It occasionally happens that two candidates receive exactly equal civil service ratings. The Civil Service Rules provide (XI, 2):

> When two or more eligibles on a register have the same average percentage, preference in certification shall be determined by the order in which their applications were filed * * *.

This is a rule of convenience, some rule being necessary in the circumstances. Subdivision "d" of section 21-b, if interpreted as merely a substitute for this rule, in cases where veterans are involved, is reasonable and violative of no constitutional provision. Therefore, under the rules of construction, this interpretation should be adopted.

Although the statute speaks of *appointment* rather than *certification*, that was also true of the statute denounced in the *Barthelmess* case, but the court said:

> It is not addressed exclusively to the power that appoints. It is addressed to the power that certifies the names of those eligible for appointment. * * *. It circumscribes the list of those whom the examining officers are to return * * * as eligible * * *.

In my opinion the first sentence of paragraph "d" of the section must be construed to mean merely that "veterans" take precedence (over those "having the same average percentage") in position upon the list from which certifications are made. And it only applies to *original appointment* lists, not to promotion lists.

(3) The second sentence of paragraph "d" provides:

> Every veteran shall be entitled to preference in appointment to all positions classified in the labor class in cities without regard to their standing on any such list, provided, however, that disabled veterans shall be preferred over all others on such list.

The Legislature, many years ago, determined that merit and fitness for unskilled and certain skilled labor positions could not be determined by examination. (Civil Service Law, section 13, paragraph 4, section 18.) In the State service, no preference among laborers, except to Civil War veterans, was ever allowed. In cities preference was given in chronological order of application. The new provision supersedes the rule of section 18, with respect to the labor class in cities. "Veterans" are preferred above others, and "disabled veterans" above other veterans. This does not violate section 9 of article V of the Constitution, for that provision has no application where, as here, examination is not practicable as a means of determining merit and fitness. But in view of section 2 of article X, we must hold that this preference only extends to certification from the list, and not to choice by appointing officer among those certified.

(4) Paragraph "e" of section 21-b provides:

> In all examinations for original appointment to any competitive position in the State service or in the civil divisions thereof, veterans shall receive additional credits for personal merit, as shown by military training and experience. The civil service commission, by proper rule or regulation, shall fix the comparative ratings to be given to veterans. The weight to be given to personal merit in no case shall exceed twenty per centum of the total weights of the examination.

In construing this paragraph, another excerpt from the opinion of Judge Cardozo is in point. He says:

> It [the Legislature] may say that military or naval service (whether in the Civil War or elsewhere) is something to be counted by the examiners, like experience in other fields, *whenever service or experience qualifies for office or employment.* [Italics mine.] Service so considered does not override the results of competitive examination; but enters into the results as a contributory factor. A different situation arises when service controls selection irrespective of qualifying value.

> It is the difference between an appraisal of merit, an estimate of fitness, and a preference or bonus. The Constitution circumscribes the field of privileges and favor.

It follows that the act under consideration here is valid in so far as it provides for additional credits in ratings *for positions in which military service or experience* is a proper factor in determining merit and fitness. Further than this it cannot go. It is obvious that a certain kind of military experience is valuable to a candidate for the position of policeman, fireman or even foreman of labor. Another kind of military experience, *e. g.*, that obtained in an engineering regiment, would be valuable to a candidate for the position of engineer in a highway department. And experience as field clerk in the army or paymaster in the navy would undoubtedly increase the fitness of a candidate for a clerical position. But the statute cannot be held to make it incumbent upon the civil service commissions to give the same credits to all kinds of soldiers and sailors who are candidates for any of "the myriad offices and employments in the civil service." It is left to the commissions to determine the weight to be given to each kind of experience, in each kind of examination, with the sole limitation that in no case shall it exceed twenty per cent of the total weights of the examination.

Albany, *July* 26, 1921.

CHARLES D. NEWTON,
Attorney-General.

TO THE STATE CIVIL SERVICE COMMISSION.

C. STATUS OF SUSPENDED LIST

(a) Reinstatements, Promotions and Transfers May Be Made Without Regard to Suspended List; Appointment for Month; Certification; Standing (§ 22-a).

INQUIRY

1. Does the provision of civil service rule VIII, subdivision 6, allowing appointment for one month regardless of standing on a list, apply to suspended list?
2. Can reinstatements of persons who resigned within a year be made under civil service rule XVI, subdivision 1, without regard to list of suspended employees?
3. Can promotions be accepted from promotion lists when there is a suspended list for the same title and salary grade of position?
4. When the suspended list is reduced to one or two names, (a) is appointing officer obliged to select therefrom, or (b) should the Civil Service Commission certify the name or names remaining on the suspended list with the addition of necessary number of names from the regular eligible list to make a complete certification of three names?
5. Can persons whose names appear on suspended list be reappointed under civil service rule XVI, subdivision 1, regardless of their standing on the list?
6. Can transfers which meet the conditions of the transfer rule be allowed regardless of suspended lists?

OPINION

After the consolidation of the Civil Service Law of 1899 and the adoption of rules thereunder, the practice under the statute and rules became pretty definitely established, and for a long period there were few changes in the statute or the rules. In 1901 the provisions for graded service were created in a separate act, which was consolidated with the Civil Service Law in the consolidation of 1909. From then until 1917 there were very few changes in statute or rules, and a very definite policy with respect to appointments, promotions, transfers and reinstatements became generally understood, rarely questioned, and never or practically never departed from.

This policy embodied several principles, such as:

(1) Appointments from open competitive lists would not be permitted where promotion within the department was practicable, but vacancies in higher positions would be filled by promotions leaving lower vacancies to be filled by appointment from original lists (cf. C. S. L., § 16, Rule XIV, 1).

(2) Transfers could always be made, even though there were lists from which original appointments might be made (Rule XV). Similarly, persons separated from the service through no fault of their own could be reinstated (within a year) in their old departments or appointed to positions in other departments, to which they had been eligible for transfer, without certification and regardless of the existence of open competitive lists for original appointment (Rule XVI, 1).

(3) Promotions were preferred over transfers (Rule XV, 6), though not over reinstatements. Promotions were also preferred over appointments (in different departments) of persons eligible under Rule XVI, 1, for their eligibility for such appointment was conditioned on eligibility for transfer under Rule XV.

The names of persons covered by Rule XVI, 1, did not, properly speaking, go upon a list. That is, they were not placed in any definite order upon a list, and although the names were necessarily compiled so that eligibility could easily be checked up, the Civil Service Commission did not certify groups of names from the compilation.

In 1914, 1915 and 1916, subdivision 2 of Rule XVI was changed a number of times, the Commission experimenting with various theories for a definite regulation of rights of persons whose positions were abolished. The theory was settled by the Commission in 1916 when that subdivision took its present form, providing for a "suspended list" of persons whose positions were abolished, from which certification should be made (a) to fill vacancies in any department — Civil War Veterans only, and (b) to fill vacancies in the department from which employees had been dropped — certification in order of original appointment to the abolished positions.

Persons whose positions were abolished went upon the "suspended list" and they became *entitled to reinstatement* if their *same* positions were re-established within a year and *entitled to certification* (to a narrowly limited class of position) in preference to those upon open competitive lists. Persons who were separated from the service by resignation, suspension, leave of absence, removal without fault, etc., did not go upon the suspended list but upon the compilation mentioned above. And they were not *entitled to certification*, but were *eligible for reinstatement*, and *eligible for appointment* in other departments (subject to the preference granted to promotions).

The difference between the right to certification in preference to open lists and eligibility for reinstatement or reappointment, should be borne in mind. For neither had preference over the other. The head of a department who had a vacancy to fill (which could not properly be filled by promotion might fill it in one of three ways:

(1) By appointment from the "suspended list" for his own department, or in the absence of such a list, from an open list.

(2) By transfer.

(3) By appointment under Rule XVI, 1. If the position were a re-establishment of position theretofore abolished, persons on the "suspended list" were preferred for re-appointment, but otherwise there was no preference. The head of the department might take his choice of transfer, appointment under Rule XVI, 1, or appointment from a certification (under Rule XVI, 2, first, then from an open list).

In 1919 and 1920 the Legislature added sections to the Civil Service Law. The result of these amendments is the subject of the present inquiry.

By chapter 251 of the Laws of 1919, section 31 was added to the law. This provided that where an employee was *separated from the service* through the abolition of a department, office or institution, or a section, bureau or division thereof, his name should be placed upon a "preferred list." This covered part of the ground covered by Rule XVI, 2, but not all, for it did not apply to individual positions abolished in a department or bureau which was continued. It created "a preferred list for the office, or position, in which he has been employed, or for *any corresponding position in the same group and grade.*" Rule XVI, 2, provided for certification (except Civil War Veterans) only to the department from which persons had been dropped. Whether section 31 intended certification to be made to other departments is doubtful. If the department were abolished, certification could not well be made to *it.* But on the other hand, section 31 provides only for certification for *reinstatement* — and appointment in another department had never been regarded as a *reinstatement* — it was either an appointment or a transfer. This would seem to indicate that only certification to the same department was contemplated. And from such a viewpoint the section seems superfluous, for it did not modify Rule XVI, 2, but merely paralleled it *in part.* To my mind the only purpose it could serve was to make it impossible for the Civil Service Commission, by amending its rules, to modify Rule XVI, 2, so far as that applied to positions abolished as a part of the discontinuance of a department or bureau, and to modify section 22, as hereinafter shown.

It should be noted that the Civil Service Commission always regarded a person as *separated from the service,* if his position were abolished, as much as when he resigned, was removed, or extended his leave of absence without pay for more than a prescribed time. It also regarded a *suspended* person as separated from the service. To be sure, section 22 always provided that a veteran, whose position was abolished, should not be separated from the service, but should be transferred to another position if one were vacant which he was fitted to fill. But if he could not be transferred, for lack of a vacancy, he necessarily became separated from the service — and section 22 never provided a preferred list for him. In the five counties in New York City, as in the government of the city itself (under the charter) persons holding competitive positions, whose positions were abolished, went upon a "list of suspended employees" for certification in preference to any other list — but nothing is said to the effect that such persons should not be *separated from the service.* They were regarded as separated, but eligible for re-employment.

The "list of suspended employees" was preferred in certification over open competitive lists, but transfers, and appointments under Rule XVI, 1, could always be made even where such list existed.

Rule XVI, 2, could not, of course, supersede the mandate of section 22, so. after its adoption there were three kinds of lists from which appointments could be made, with preference as follows:

(1) Under section 22.
(2) The list under Rule XVI, 2.
(3) Open competitive lists.

And transfers or appointments could always be made, in spite of the existence of any or all of such lists.

Further, *promotions could always be made,* and were in fact *preferred,* in spite of the existence of such lists.

The passage of section 31, in 1919, added one more list from which certifications should be made in preference to all other lists. And still promotions were preferred, and transfers, or appointments under Rule XVI, 2, were possible, in spite of the existence of the other lists (now four).

That is, although there were now four classes of lists from which *certification* could be made for *appointment,* the head of a department (except in reinstatement in the same position, or one identical with it) could fill a vacancy by *promotion* if possible, otherwise by *transfer* or *appointment under Rule XVI, 1,* without calling for certification from any one of them.

Of course, Civil War Veterans always had their constitutional preference, which was not superseded by any statutory amendment or change in the rules.

In 1920 the Legislature added a second "Section 22-a" to the Civil Service Law (one had been added in 1918) by chapter 836 of the laws of that year. This is the section with the interpretation of which we are immediately concerned. It seems to be in complete conflict with section 31, and Rule XVI, 2, except where it merely reiterates their provisions, and it provides for a new list which takes the place of the lists under them.

Section 22-a begins by providing that when any position in the competitive class or qualified grades is abolished, the incumbent shall be deemed *suspended* without pay. This brings such persons into the provisions of subdivision 1 of Rule XVI, which covers persons who are *suspended*. It next provides that the order of suspension shall be in inverse order of original appointment — this provision was the subject of a lengthy opinion from this department in July, 1920 (*Rep. Atty.-Gen.*, 1920, p. 137), and needs no comment here. It goes on to provide that the person suspended shall be *entitled* to *reinstatement*, in order of original appointment in that or a corresponding or similar position if there is need for his service within two years. That means the same position in the same department, or one just like it in the same department, or one created under a different title but for the same purpose in the same department. It cannot refer to a *different* position in the same department or to a similar position in a different department, for in such a case the vacancy would be filled, not by *reinstatement* but by *transfer* or *appointment*. Also, if a different position in the same department or a position in another department were intended, the rest of the section would be superfluous.

The section goes on to provide for a "list of suspended employees" from which *certification* must be made before certification from any other list. There is a preference for *reinstatement* and a preference for *certification*. But there is no preference for *appointment* to a different position, no preference over Rule XVI, 1, no preference over transfer. If opportunity occurs for *reinstatement* (*i. e.*, to the same or corresponding position in the same department) *one* upon the list is *entitled* to be reinstated. The head of the department has no choice. He must take the man at the top of the list. But if a vacancy occurs to which *reinstatement* cannot be made, the head of the department can still fill it by transfer, by appointment under Rule XVI, 1, or by taking a name from a *certified* list. He is not restricted. He can take anybody eligible for transfer (with the consent of the head of the department from which transfer is made, and of the Civil Service Commission). He can take anybody eligible under Rule XVI, 1. Or he can ask for a certification, getting three names. If he asks for a certification he will get names from the list under section 22-a if there be such a list. If there be no such list he will get names from the list under the latter part of section 22, if any. Otherwise he will get names from an open competitive list. The lists under section 31 and Rule XVI, 2, disappear, for all those names are of necessity upon the list under section 22-a.

But the question of promotion comes in. Could the head of the department ask for a promotion list? Or does the provision "before making certification from any other list" in section 22-a give a preference to that list over promotion lists? I think not, for the following reasons:

The Civil Service Law, as it stands, mentions lists, and certification from lists, but it does not mention promotion lists nor certification for promotion. When section 22-a was added, creating a list which should have preference over other lists, it naturally means the other lists mentioned in the statute itself. It means the open competitive lists mentioned in sections 14 and 15, the "list of suspended employees" mentioned in section 22, the "preferred list" mentioned in section 31. But it is a primary rule of statutory construction that where different parts of the same statute, or different statutes, seem to be in conflict and it is not *clear* that the later enactment was intended to repeal the former, they will be interpreted so as to give effect to both, as far as possible. Repeals by implication are only considered to exist where the intent is unmistakable. And we have section 16 of the law providing "Vacancies in positions in the competitive class shall be filled, so far as practicable, *by promotion* * * *".

With promotion always preferred over transfer or appointment under Rule XVI, 1, it would be absurd to say that the head of a department might fill a vacancy by one of those methods, without calling for certification under section 22-a, but could not make a promotion.

Also, under section 16 an increase of salary beyond a grade, without change of duties, is a promotion, to be made, under Rule XIV after examination where more than three are eligible. This kind of promotion does not fill any vacancy in position, but only a vacancy in part of a one-salary appropriation.

If we were to rule otherwise where would it lead us? The stenographers in the Attorney-General's office are specialized in legal work. A vacancy in an $1,800 position occurs. There are stenographers at $1,500, eligible for promotion, and others down to $900. A stenographer who had drawn $1,800 in the Highway Department could not be transferred to the position. The statute prohibits it, and she would not be as well fitted for the position as one of our own $900 girls, nor any better than a $1,200 girl on an open list. If I had to appoint her in preference to making a promotion, I would be wasting the State's money if I gave her more than $900 or $1,200. And the $1,500 girls would lose the rare opportunity to get ahead — a bad thing for their morale, which rests largely on ambition. It would be a direct defiance to the promotion principle.

Or suppose I have one clerk in the $1,800 grade and because of his value, and fear that he will find a better position elsewhere, I succeed in getting an appropriation of $2,100 for him from the Legislature. Could it be that the Legislature, which appropriated the money for him, intended that he could not get it so long as there was a $2,100 clerk on the suspended list, dropped from the Health Department? Or that I was expected to drop him and appoint the Health Department man in his place?

The Legislature will not be presumed to have intended an absurdity.

I conclude that the preference over other lists in section 22-a is a preference over the other *statutory* lists, the "open competitive," "suspended employee," and "preferred" lists mentioned above, but not over promotion lists, nor over promotions made without certification, where permitted by the rules.

The purpose of section 22-a was to enlarge, not to restrict, the rights of persons who were separated from the service by the abolition of their positions. Therefore I cannot believe that it was intended to put them in a worse position than those separated from the service, equally without fault, but by their own voluntary acts. I cannot believe that it was intended to exclude them from the rights accorded to persons who resigned. The section specifically says they shall be deemed *suspended*. It says that first. And they should have all the rights accorded by Rule XVI, 1, to suspended persons, equally with those who resign or procure leave of absence. As pointed out above, the preference in order of original appointment runs only to *reinstatement* and to *certification in groups*. Where there is no reinstatement and no certification, I consider these persons *suspended*, and eligible equally with other suspended persons, to appointment under Rule XVI, 1.

When the head of a department calls for a certification of names, from preferred or open competitive lists, which he only does when he need not make a promotion and does not wish to make a transfer or an appointment under Rule XVI, 1, he is entitled to a choice. With the exception of the short time when the statute contained the provision held unconstitutional in *People ex rel. Balcom* v. *Mosher*, 163 N. Y. 32, appointing officers have always been given a choice of three names, with two exceptions. One is in case there is a Civil War Veteran on the list, and the other is in case of *reinstatement* under section 22-a (or formerly under Rule XVI, 2). In providing for certification from open lists, it has always been the rule that if there were less than three names on a list, the appointing officer was entitled to a new list. There is nothing in section 22-a to indicate an intent to depart from this rule. "Certification" is used therein in the usual sense. And I consider the appointing officer still entitled to three names. If the suspended list contains but two names, one should be added from the next best list (that under section 22 or an open list) and if there be no next best list, then one should be prepared, just as if it had been a competitive list which contained but two names.

I think the suspended list should be regarded as in effect the top part of a list containing, (1) the list under section 22-a, (2) the list under section 22 and (3) the open competitive list. This for the purpose of certification, and equally for the purpose of temporary appointments under Rule VIII, 6. Such temporary appointments should be possible regardless of position on the total list.

Section 22-a contains a saving clause for veterans covered by section 22. They get the benefits of section 22-a, but are not prejudiced by it. So, if a veteran's position be abolished, he is still *entitled* to transfer, if he can find a vacant position at the same salary, which he is fitted to fill. And the appointing officer has no choice in that case. He cannot fill the vacancy by transfer, appointment under Rule XVI, 1, or by taking a name from a certified list. He must take the veteran. If there be several eligible veterans there is no preference among them, and the appointing officer may take his choice.

By way of recapitulation I will answer the questions submitted, as follows:

1. Does the provision of civil service Rule VIII, subdivision 6, allowing appointment for one month regardless of standing on a list, apply to suspended lists?

Answer: The suspended list should be regarded as the first part of a grand list, from which any name may be taken for temporary appointment.

2. Can reinstatements of persons who resigned within a year be made under civil service Rule XVI, subdivision 1, without regard to list of suspended employees?

Answer: Yes.

3. Can Promotions be accepted from promotion lists when there is a suspended list for the same title and salary grade of position?

Answer: Yes.

4. When the suspended list is reduced to one or two names (a) is appointing officer obliged to select therefrom, or (b) should the Civil Service Commission certify the name or names remaining on the suspended list with the addition of necessary number of names from the regular eligible list to make a complete certification of three names?

Answer: (a) No, (b) Yes.

5. Can persons whose names appear on suspended list be reappointed under civil service rule XVI. subdivision 1, regardless of their standing on the list?

Answer: Yes.

6. Can transfers which meet the conditions of the transfer rule be allowed regardless of suspended lists?

Answer: Yes.

Dated *July* 21, 1921.

CHARLES D. NEWTON,
Attorney-General.

To THE STATE CIVIL SERVICE COMMISSION.

D. EXTRA COMPENSATION

(a) State May Pay Additional Compensation for Work Outside Regular Hours and Duties (§ 43).

December 22, 1921.

STATE TAX COMMISSION, *The Capitol, Albany*, N. Y.

GENTLEMEN.— Receipt is acknowledged of yours of the 19th inst., with reference to the payment of additional compensation to a Mr. Fisher connected with your department.

In the case referred to and under the circumstances connected with it, I am of the opinion that it would be legal to pay Mr. Fisher extra compensation for looking after the furnace required to heat the building at No. 21 Washington avenue, Albany, N. Y., where one of your bureaus is located which work, I have been informed, is done outside of his regular hours early in the morning and late at night, and is not a part of his regular duties.

This work is absolutely necessary and is not within the province of the Superintendent of Public Buildings, or in any event he does not handle it. It might very properly be termed temporary emergency work.

I do not believe it comes within the prohibition against extra compensation contained in section 43 of the Civil Service Law or section 28, article III of the State Constitution.

The situation is, I believe, covered in an opinion of this office found in the Report of the Attorney-General for the year 1917 at page 325, which holds as follows:

"A civil service employee in one of the distinct bureaus of the office of the Secretary of State is entitled to compensation for work performed in another district bureau where such work is not within the scope of his original employment and is performed during such periods of time as he has not contracted to devote to the work of the bureau in which he is regularly employed."

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

E. EMPLOYEES' RETIREMENT SYSTEM *

(a) State Service Does Not Include Teaching in an Institution Not Supported from Public Funds (§ 50, subd. 8).

October 11, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.*

DEAR SIR.— Receipt is acknowledged of your communication of the 5th inst.

You state that a member of the New York State Employees' Retirement System claims twenty-one years as prior service, to wit: eight years as a teacher in the Manhattan College of New York City and thirteen years as a teacher in the Christian Brothers' Academy, Albany, N. Y. You inquire if said teacher is entitled to the credit of twenty-one years for such service pursuant to subdivisions 8 and 9 of section 50 of chapter 741 of the Laws of 1920, as amended by chapter 365 of the Laws of 1921.

Subdivision 8 of section 50 of chapter 741 of the Laws of 1920 was amended by chapter 365 of the Laws of 1921, defining said service to mean "* * * service as teacher in the public schools of the State of New York, however paid * * *"

The question to be determined is whether or not Manhattan College of the City of New York and the Christian Brothers' Academy of Albany, N. Y., are "public schools" within the meaning of subdivision 8 of section 50, as amended.

It seems to me clear that neither of these institutions are public schools within the meaning of that term as used in said subdivision. They are private institutions of learning receiving no financial support from the State through appropriations nor from moneys raised by local taxation.

I therefore hold that the twenty-one years served as a teacher in the Manhattan College of New York City and as teacher in the Christian Brothers' Academy, Albany, N. Y., cannot be credited as prior service under the provisions of subdivision 8 of section 50 of chapter 741 of the Laws of 1920 as amended by chapter 365 of the Laws of 1921.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

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* The coverage of the general retirement pension and annuity system established for state employees by L. 1920, ch. 741, has been extended by acts of 1921 and 1922 to county and city employees not eligible to existing local systems and to certain state employees hitherto belonging to special systems.

(b) Special Deputy Clerks to the Supreme Court Paid by a County Are Not Eligible to Membership (§ 50, subd. 8).*

October 26, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.*

DEAR SIR.— Receipt is acknowledged of yours of the 20th inst. By chapter 741, Laws of 1920, the New York State Employees' Retirement System was created.

Membership in such system is defined as follows:

> § 52. Membership of retirement system. Membership in the retirement system shall begin not earlier than the first day of January, nineteen hundred and twenty-one, and shall consist of:
>
> (a) All persons, except the exempt employees of the classified service of the state and persons specified in subdivision two of this section, who enter or re-enter such classified service after the first day of January, nineteen hundred and twenty-one, and who complete or shall complete six months of state service; and
>
> (b) All persons, except persons specified in subdivision two of this section, in state service, who file with the comptroller a statement duly executed and acknowledged consenting and agreeing to membership and to the deductions for annuity purposes prescribed in this article.
>
> 2. Persons who are or who may be entitled to benefit by existing laws providing for pensions and annuities for civil service employees wholly or partly at the expense of the state of New York or of any political subdivision thereof, shall not be members.

It will be noted that an essential qualification for membership in this system is that a person must be in *State service.*

Section 50, subdivision 8 of chapter 741 of the Laws of 1920, as amended, defines State service as follows:

> 8. State service shall mean service, whether appointive or elective, as an *official, clerk or employee* of the state of New York, including service as a teacher in the public schools of the state of New York, however paid, and any other branch of service and any former city or county institution now a state institution, *so far as such service is paid for by the state of New York or by any such institution*, except service on or after the first day of January, 1921, while such employee is, or may be, entitled to benefit by existing laws providing for pensions or annuities for civil service employees wholly or partly at the expense of the state of New York or of any political subdivision thereof.

This definition indicates that payment of salary by the State is an essential to entitle a person to become a member of the Employees' Retirement System.

The two men involved in your inquiry are special deputy clerks in the Supreme Court of the State of New York in and for the county of Westchester.

The records in the State Comptroller's office show they are not paid by the State. As a matter of fact, these men admit they are paid by the county of Westchester.

It might be further stated that the records of the State Civil Service Commission classified these positions as county positions. The examinations for such positions are confined to residents of Westchester county and to be entitled to appointment an applicant must be a resident of said county.

Chapter 185 of the Laws of 1913, as amended by chapter 557 of the Laws of 1915, amends the Judiciary Law in relation to retirement of employees of the Appellate Division of the Second Department, by adding section 117 as follows:

> § 117. Retirement of employees by the Appellate Division of Second Department. The appellate division of the supreme court of the second department is hereby authorized in its discretion to retire any clerk.

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* Since this opinion was written, county employees have become eligible to the system by L. 1922, ch. 591.

> assistant clerk, stenographer, interpreter, librarian or attendant who shall have served as such in the supreme court in and for the second or ninth judicial district or in any court which has been consolidated with the said supreme court and who shall have become physically or mentally incapacitated for the further performance of the duties of his position, provided such service in one or more of such positions has continued for a period of twenty-five years or more; or any honorably discharged soldier or sailor of the civil war serving as such clerk, assistant clerk, stenographer, interpreter, librarian or attendant who at the time of such retirement shall have served continuously for a period of fifteen years and who shall have reached the age of seventy years. Any person retired from service pursuant to this section shall be paid an annual sum or annuity to be determined by the appellate division of the second department not exceeding one-half of the average amount of his annual salary or compensation for a period of two years preceding the time of such retirement. Such annuity shall be paid in equal monthly instalments during the lifetime of the person so retired, and the amount thereof shall otherwise be collected and paid in the same manner as the salary or compensation of such person was required to be collected and paid at the time of such retirement.

Westchester county is in the Ninth Judicial District.

Chapter 568 of the Laws of 1921 was an act to provide a more uniform retirement plan for State employees, under the provision of the New York State Employees' Retirement System, and to repeal certain acts and parts of acts providing for other retirement systems.

It provides in part as follows:

> § 1. All state employees, except teachers in the State College for Teachers and the State Normal schools who shall be considered as teachers subject to the provisions of article forty-three-b of the education law, and, except such state employees as are otherwise provided for by the insanity law and the prison law, who are included under the provisions of any law repealed by section six of this act, who elect to become members of the New York State Employees' Retirement System on or before January first, nineteen hundred and twenty-two, shall become members of such system and shall be subject to all the provisions of law relative to such system with the exception that they shall be entitled to credit for prior service as defined by section fifty-three of article four of the civil service law, including service as a grand jury stenographer, up to and including July first, nineteen hundred and twenty-one. * * *

Section 6 of the last mentioned act repeals chapter 185 of the Laws of 1913 as amended by chapter 557 of the Laws of 1915, which laws are above referred to.

Under the provisions of chapter 568 of the Laws of 1921, all *State Employees*, with certain exceptions, who are included under the provisions of any law repealed by section 6 of said act, if they elect so to do by a given date, shall become members of the Employees' Retirement System, *subject to all provisions of law relative to such system.*

I have gone at some length into the legislation with reference to the question involved so that the whole situation might be before you.

I am of the opinion that the two men in question are not entitled to become members of the Employees' Retirement System for the reason their salaries are not paid by the State of New York as required by the provisions of chapter 741 of the Laws of 1920 (Employees' Retirement System).

There is a further reason why they are not entitled to become members, an actuarial one and that is, no provision is anywhere made for the payment by the State or by Westchester county of the contribution to the reserve fund which must be made in addition to the contribution by the member.

The cases referred to in your letter as having been cited by these men are not applicable to the situation here for the reason that in *People ex rel. Wogan* v. *Rafferty*, 208 N. Y. 451, the question there involved was the right of the Legislature to take from a constitutional officer the substance of the office itself and to transfer it to another who is to be appointed in a different manner, and to hold the office by a different tenure than that which was provided for by the Constitution of the State. It was there held such action by the Legislature was not a legitimate exercise of the right to regulate the duties or emoluments of the office, but was an infringement upon the constitutional mode of appointment. It is clear this decision has not bearing upon the instant case.

Olmstead v. *Meahl*, 219 N. Y. 270, was a taxpayer's action against a county clerk to prevent him from removing special deputies then holding office and appointing others in violation of the civil service rules.

It was held that county clerks and their special deputies, appointed for that purpose, *are state officers* when performing their duties as clerks of the Supreme Court and County Court.

The general purport of these decisions is that county clerks and their deputies and special deputies are State officers. The determining factor in this matter is not whether these men are State employees, but whether their salaries are paid by the State as required by chapter 741 of the Laws of 1920.

There seems to be much confusion in the minds of many as to the meaning of "state service." They do not differentiate between State service or employment, as such, and the credit that shall be given for length of service or employment for the State under the provisions of the Employees' Retirement System.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(c) Teachers in the State Agricultural and Industrial School at Industry Belong to the General System (§ 50, subd. 8; § 52, subd. 2).*

FIRST OPINION

INDUSTRY, NEW YORK, *Nov.* 16, 1921.

HON. CHARLES D. NEWTON, *Attorney-General, State of New York, Albany, N. Y.*

MY DEAR MR. NEWTON.— When the change in the retirement laws governing teachers in institutions, State Normal Schools and the Public Schools of the State made by the last Legislature, was brought to the attention of the faculty of our school department, they requested the right to benefit by the Educational Retirement Fund Law.

The Superintendent of Schools, Miss Julia C. Ganiard, wrote Dr. Gilbert, then Acting Commissioner of Education, in regard to the matter, last May. In his reply, Dr. Gilbert stated that it seemed to him, by a reasonable construction of The State Teachers Retirement Law, the teachers of this school might be brought under its provisions. He stated, however, that he did not have the power to determine the question and suggested that the matter be brought to your attention for a ruling.

The members of the faculty of this school are experienced teachers duly licensed by the Education Department of the State. They each have a Normal School diploma or its equivalent. Seven of them are graduates of Geneseo Normal School. Among the others are graduates of Cortland, Buffalo and Brockport Normal Schools, and a graduate of Elmira College.

Some of their reasons for requesting to benefit by the Educational Retirement Fund Law are:

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* Since this opinion was written, L. 1922, ch. 104, has made the teachers in the State Agricultural and Industrial School members of the State Teachers' Retirement System under Article 43-b of the Educational Law.

First, as a matter of justice to be classed with the other teachers of the State.

Second, in the Educational Retirement Fund Law, teaching experience outside the State, to the limit of ten years may be counted, whereas, in the Civil Service Retirement Fund Law, only teaching experience within the State may be counted. Some of our teachers have taught five years or more in other States.

Third, the rate of premium in the Educational Retirement Fund Law is lower and unvarying, while in the Civil Service Retirement Fund Law it is variable. It was frankly stated that a better rate could be given for teachers than could be given in a law covering all classes of workers under the Civil Service.

Fourth, it would simplify the administration of the pension fund for teachers, as vacancies occurring in this school in the future could be filled by teachers, meeting State requirements, and our teachers could accept positions in the schools without loss or change in regard to pension.

Thanking you in advance for your distinguished consideration, and with kindest personal regards, I am,

Very truly yours,
HOBART H. TODD,
Superintendent.
November 25, 1921.

MR. HOBART H. TODD, *Superintendent-Treasurer, State Agricultural and Industrial School, Industry, New York.*

DEAR SIR.— Receipt is acknowledged of yours of the 18th inst., with reference to the rights of teachers in the State Agricultural and Industrial School at Industry, New York, to be members of the "New York State Teachers' Retirement System," as provided for in article 43b of the Education Law, constituting chapter 16 of the Consolidated Laws, as amended.

Section 1103 of said article 43b provides for this retirement board, which is charged with administration and operation of this retirement system.

Paragraph 2 of section 1106 of said article 43b provides as follows:

> (2) The counsel of the state education department shall be the legal advisor of the retirement board.

Under these circumstances in order to avoid the possibility of a conflict in rulings I have made it a rule not to render any opinion upon questions arising out of the law creating the New York State Teachers' Retirement System, except to and at the request of the Commissioner of Education or the counsel of the State Education Department.

Ordinarily all questions with reference to this retirement system should be addressed to and be answered by the counsel of the system. Should such counsel feel that an opinion from this office in any particular case, is necessary an opinion will be rendered at his request.

However, in order to save time, I have had this matter taken up with the Education Department.

Attached hereto is a copy of an opinion by Hon. Frank B. Gilbert, as Acting Commissioner of Education and counsel of the State Education Department and legal advisor of the Retirement Board.

He holds that teachers in your institution are not eligible to membership in the New York State Teachers' Retirement System which is confined to public school teachers, teachers in State Normal Schools and teachers in the State College for Teachers at Albany, N. Y.

I agree with him in his conclusion.

Article 43a of the Education Law created a Retirement Fund for Teachers in *State Institutions.*

Chapter 568, Laws of 1921, repealed said article 43a effective July 1, 1925, and numerous other pension laws and provided in part as follows:

> § 1. All state employees, except teachers in the State College for Teachers and the State Normal schools who shall be considered as teachers subject to the provisions of article forty-three-b of the educa-

> tion law, and, except such state employees as are otherwise provided for by the insanity law and the prison law, who are included under the provisions of any law repealed by section six of this act, who elect to become members of the New York State Employees' Retirement System on or before January first, nineteen hundred and twenty-two, shall become members of such system and shall be subject to all the provisions of law relative to such system with the exception that they shall be entitled to credit for prior service as defined by section fifty-three of article four of the civil service law, including service as a grand jury stenographer, up to and including July first, nineteen hundred and twenty-one. * * *

I cannot escape the conclusion that teachers in your institution, which is a "*state institution*," as a result of the repeal of article 43a of the Education Law are not eligible to membership in the Teachers' Retirement System provided for by article 43b, but are eligible to join the New York State Employees' Retirement System provided for by chapter 741 of the Laws of 1920, being article 4 of the Civil Service Law.

The fact that the members of the faculty of your school are licensed by the Education Department of the State is not controlling. They are teachers in a "*State institution,*" as distinguished from teachers in the public school system of the State as defined by article 43b and chapter 568 of the Laws of 1921.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

SECOND OPINION

COMPTROLLER'S OFFICE,
EMPLOYEES' RETIREMENT SYSTEM,

November 17, 1921.

HON. CHARLES D. NEWTON, *Attorney-General, Albany, N. Y.:*

DEAR SIR.—An opinion on the following is desired, perhaps more as Vice-Chairman of the Pension Commission than as Director of the Employees' Retirement System.

A teacher in one of the State institutions will have completed 30 years of teaching service in June, 1925, all of which service is credited toward a retirement under sections 1095 to 1099 of the Education Law, which sections were last amended by chapter 614 of the Laws of 1915.

For the school years beginning 1915 and ending June, 1919, this person was a teacher in the Bedford institution. The school year 1919–1920 this person taught at Round Ridge, N. Y., for the school years of 1920–1921, and presumably from the present time until June 30, 1925, this person has taught and will teach at the institution at Industry. The law provides that the last ten years of teaching service which may be credited toward a pension under the Institution Teachers' Retirement Plan must be in schools or institutions "supported by the State."

Question: Does the teaching at Round Ridge for the school year 1919–1920 cause this person to be not eligible to retirement under sections 1095 to 1099 of the Education Law?

A very early reply is requested, since the teacher desires to become a member of the Employees' Retirement System if she cannot retire under the Teachers' Retirement Plan and if she does not become a member before December 31, 1921, she will lose as a prior service credit all teaching service she may have had prior to July 1, 1921. You can readily see the point is quite vital to her.

Yours very truly,
JAMES A. WENDELL,
Comptroller.

November 25, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.:*

DEAR SIR.— Receipt is acknowledged of yours of the 17th inst., with reference to the right of a teacher in a State institution to become a member of the Retirement System for teachers in State institutions created under article 43-a of the Education Law.

Article 43-a of the Education Law creates a retirement fund for teachers in State institutions.

Section 1095 of said article provides as follows:

> § 1095. Retirement of Certain Teachers in State Institutions and Institutions Receiving State Pupils. Every teacher in a State institution and in an institution for the instruction of the deaf and dumb and the blind, receiving State pupils whose instructions and support are paid for by the State, who, *for a period of ten years immediately preceding,* has been employed as a teacher in any college, school, institution or teachers' institute maintained and supported by the State, or in any such institution for the instruction of the deaf and dumb and the blind and who shall have been engaged in teaching in some college, university, school, academy, institution, teachers' institutes or in the public schools of this State or elsewhere during a period aggregating thirty years must, at his request, or may, on the order of the commissioner of education, be retired from such employment.

It will be noted that one of the qualifications to entitle a person to be retired under this system is, that such person must have been employed as a teacher in a school, college, etc., *supported by the State, for a period of ten years immediately preceding the date of retirement.*

By chapter 568 of the Laws of 1921, article 43-a above referred to is repealed, *effective July* 1, 1925.

It is clear that in the case referred to in your letter, the person in question would not have been in continuous service for ten years immediately preceding June 30, 1925, because of the period spent while teaching at Round Ridge, N. Y. (not a school supported by the State) and, therefore, would not be entitled to be retired under said law, viz., article 43-a of the Education Law.

However, under the provisions of chapter 568 of the Laws of 1921 such person would be entitled to membership in the New York State Employees' Retirement System as created by chapter 741 of the Laws of 1920, as amended.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

July 29, 1921.

(d) Employees of the Institution for Defective Delinquents Belong to the General System (§ 50, subd. 8; § 52, subd. 2).

DR. WALTER N. THAYER, JR., *Superintendent, Institution for Defective Delinquents, Napanoch, N. Y.:*

DEAR SIR.— I acknowledge receipt of your letter of July 27th in which you state that the Comptroller has ruled that the change of name of your institution by chapter 483 of the Laws of 1921 does not deprive any of its employees of any rights which might be theirs under the Prison Retirement Law as amended by chapter 425 of the Laws of 1920.

The Comptroller's letter I learn was written under a misapprehension of the facts. It seems that he took the facts in your letter as conclusive.

An examination of chapter 483 reveals that the reformatory at Napanoch has been converted into a State Institution for Mental Defectives, and that whereas it was heretofore under the control of the Prison Department it is now "under the supervision, control and direction of the commission for mental defectives."

The State Prison Retirement Law relates solely "to a guard or other employee in a State prison or reformatory, or an employee in the prison department, * * *." An employee of the Prison Department within the meaning of the statute is "any person employed under the superintendent of state prisons."

Retirements under the Prison Retirement Law are based on service and there are no contributions on the part of the participants therein. There is, therefore, no question of vested rights involved.

Under this construction of the matter it appears further that the employees and officers in your institution may join the State Employees' Retirement System. If you will communicate with the Comptroller, he will give you full details and instructions.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(e) Members of the General System May Retain their Membership upon Transfer to Positions Covered by Special Systems (§ 50, subd. 8; § 52, subds. 2, 9).

FIRST OPINION

COMPTROLLER'S OFFICE, *April* 12, 1921.

HON. CHARLES D. NEWTON, *Attorney-General, Albany, N. Y.:*

DEAR SIR.—An opinion is requested in the following matter:

Supposition: Should a member of the Employees' Retirement System either by transfer or otherwise, from one position to another with no lapse in service, or with a lapse in service, providing that such member did not withdraw contributions from the Employees' Retirement System, become an employee in any of the institutions or departments provided for by a pension plan in the Insanity Law or the Prison Law, does his membership cease in the Employees' Retirement System, or may he of his own volition cease his membership in such system?

Attention is called to section 52, part 9 of the Employees' Retirement Law and section 72, parts 1 and 2.

This question was discussed verbally and it was rather decided that an employee changing his location of State service for whatever the cause, could elect the system he desired to be a member of.

This does not seem practicable and would be pleased to discuss the matter further if necessary.

Yours very truly,
JAMES A. WENDELL,
Comptroller.

June 28, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.:*

DEAR SIR.—Answering your question in your letter of April 12th, last, would say it is my opinion that under the circumstances therein named, a member changing his location of State service would not be at liberty to elect in which pension system he desires to be a member.

If he was already a member of the Employees' Retirement System (chapter 741 of the Laws of 1920) he could not of his own volition withdraw from the Employees' Retirement System and join another system unless, under the law, he was compelled to join the system in connection with the department to which he might have been transferred.

Paragraph 9, section 52, of chapter 741 of the Laws of 1920, provides when and how persons cease to be members of the Employees' Retirement System.

However, if the Legislature should pass any law granting pensions to be paid wholly or in part by the State outside of the Employees' Pension System to any particular class of State employees, the above ruling might not apply as far as the right to withdraw from the Employees' Pension System and have their contributions returned is concerned. This letter I think also answers your communication of the 18th inst.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

SECOND OPINION

COMPTROLLER'S OFFICE, *June* 30, 1921.

HON. CHARLES D. NEWTON, *Attorney-General, Albany, N. Y.:*

DEAR SIR.— This Bureau has your letter of June 28th, rendering an opinion as requested in a letter of April 12th.

You state that a member of the Employees' Retirement System being still in State service " could not of his own volition withdraw from the Employees' Retirement System and join another system unless, under the law, he was compelled to join the system in connection with the department to which he might have been transferred."

To be specific, if A, an employee in the Secretary of State's office, a member of the Employees' Retirement System, should be transferred to the Hospital Commission office, would he still be a member of the Employees' Retirement System?

If he were a new entrant in State service and entered the Hospital Commission, he would under the Hospital Law become a member of that system.

But, being a member of the Employees' Retirement System and since by transfer he does none of the things stated in subdivision 8 of section 52 of the Employees' Retirement System Law, does he cease membership in the Employees' Retirement System?

I can readily see that if the Legislature should pass in the future, a law granting to certain employees pensions other than that granted by chapter 741 of the Laws of 1920, that the latter law might apply, but the question is, can a present member of the Employees' Retirement System still in State service cease membership in the Employees' Retirement System except as he may do one or more of the things enumerated under the above referred to subdivision 9 of section 52.

Yours very truly,
JAMES A. WENDELL,
Comptroller.

July 7, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.:*

DEAR SIR.— Receipt is acknowledged of yours of the 30th ulto.

With reference to the instance mentioned in the third paragraph of your letter, I advice that under such circumstances said transferred employee would be still a member of the Employees' Retirement System.

I agree with you in your conclusion in the fifth paragraph of your letter. I am of the opinion that the employee does not cease membership in the Employees' Retirement System for the reasons stated in such paragraph.

Answering the query in the sixth paragraph of your letter, I advise that as a general proposition a present member of the Employees' Retirement System still in State service, continues his membership in the Employees' Retirement System, except as he may do one or more of the things enumerated under subdivision 9 of section 52 of chapter 741 of the Laws of 1920.

But this rule would not apply to a case that might arise under the new Military Law where a separate pension system in favor of certain war veterans is created. Present members of the Employees' Retirement System, who under the Military Law as amended, are covered by the pension system therein provided may withdraw from the Employees' Retirement System and have their contributions returned if they desire to be covered by the provisions of the Military Law.*

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

THIRD OPINION

ALBANY, N. Y., *July* 29, 1921.

HON. CHARLES D. NEWTON, *Attorney-General, Albany, N. Y.:*

DEAR SIR.— * * * Please advise relative to the following:

1. When an employee is regularly appointed and immediately preceding that date he has been in the civil service of the State and has resigned to accept appointment in one of the prisons or the Prison Department, as in the case under consideration:

(a) Can or must he remain a contributing member of the Employees' Retirement System?

(b) Can or must he cease to be a member of the Employees' Retirement System and automatically become entitled to the retirement provisions of the Prison Law?

(c) Would a transfer from other than the prison service affect the case in any way?

2. If he has been formerly in the Civil Service of the State and some time has elapsed since such service but he has not resigned or withdrawn his contributions as a member of the Employees' Retirement System, what would be his right or requirement relating to pension?

3. If he has resigned, withdrawn his contributions and ceased to be a member would this in any way affect his eligibility for pension under the provisions of the Prison Law, chapter 425, Laws of 1920?

Respectfully submitted,
C. F. RATTIGAN,
Superintendent.

September 13, 1921.

HON. CHARLES F. RATTIGAN, *Superintendent of Prisons, Albany, N. Y.:*

DEAR SIR.— Receipt is acknowledged of yours of July 29, 1921, and also of August 30, 1921.

The main question is, does the fact that section 410 of the Prison Law, providing for a retirement system for guards and other employees of the Prison Department, automatically cut a Prison Department employee (already a member of the Employees' Retirement System, chapter 741 of the Laws of 1920) out of such Employees' Retirement System and require him to be a member of the Prison Department Retirement System.

Subdivision 2 of section 52 of chapter 741 of the Laws of 1920 (Employees' Retirement System) provides as follows:

> Persons who are or may be entitled to benefit by existing laws providing for pensions and annuities for civil service employees wholly or partly at the expense of the State of New York or of any political subdivision thereof, shall not be members of the New York State Employees' Retirement System.

Section 410 of the Prison Law provides as follows:

> § 410. When Guards and Other Employees May Be Retired. A guard or other employee in a State prison or reformatory, or an employee in the prison department, who shall have served a term of employment of twenty-five years, which employment, in the case of a guard or employee in a state prison or reformatory, was either wholly in such prison or reformatory or partly therein and partly in another prison or reforma-

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* See opinion relative to Military and Naval System under subtitle "f" immediately following.

> tory or in a state hospital or penitentiary, or which employment, in the case of an employee of the prison department, was either wholly in such department, or partly therein and partly as a guard or other employee in a prison, reformatory, hospital or penitentiary, or in one or more of them, and which, in the case of any such guard or employee in a state prison or reformatory or employee in the prison department, was either in one consecutive term or in two or more terms which shall together amount to a total period of employment of twenty-five years, may, if unable to perform his regular duties and in a manner satisfactory to the superintendent of prisons or superintendent of reformatories, as the case may be, be retired as hereinafter provided at one-half the salary paid to him for the year immediately preceding such retirement. Any such guard or employee who shall have reached the age of seventy years, who shall have served a term of employment of not less than fifteen years, may, if unable to perform his regular duties in a manner satisfactory to the superintendent of prisons or the superintendent of reformatories, as the case may be, be retired as hereinafter provided, and be paid such proportion of one-half of the salary paid him for the year immediately preceding such retirement, as the number of years served bears to the full term of twenty-five years. Such payment shall be payable out of moneys appropriated therefor, and shall not be revoked, diminished or subject to the claims of creditors. Such guard or employee may be retired when such action shall be in the interest of the State in the following manner: A guard or employee of the prison department shall be retired upon approval of the superintendent of prisons at the expiration of twenty-five years of service, upon application for such retirement to the superintendent of prisons; a guard or employee in a state reformatory shall be retired at the expiration of twenty-five years of service upon approval by the board of managers of such reformatory, upon application by such guard or employee to the superintendent of reformatories. Within the meaning of this section, an employee of the prison department means any person employed under the superintendent of state prisons.

I am of the opinion that the employee may still remain a member of the Employees' Retirement System and cannot be forced to join the Prison Department Retirement System for the following reasons:

In order to participate in the Prison Pension System, only service as a guard or other employee in a state prison or reformatory or an employee in the Prison Department is taken into consideration in computing length of service upon which the right to a pension rests. On the other hand under the Employees' Retirement System any and all State service is taken into account. To hold that a State employee transferred to the Prison Department must discontinue his membership in the Employees' Retirement System and join the Prison Department System would invariably work a great disadvantage to him, for he would lose the benefit of all the time he served in the other State departments, which could not be credited to him under the Prison Department System.

I believe that subdivision 2 of section 52 of the Employees' Retirement System Law is intended to cover those *already* "entitled to benefit by existing laws providing for pensions and annuities" or those entering departments which have separate pension systems of their own, as original appointees, and does not affect persons entering such departments who are already members of the Employees' Retirement System.

The rule is to avoid the retrospective reading of statutes, unless required by express mandate of the Legislature. A conclusion contrary to the one I have reached would deprive the employee of the benefit of years of State service prior to entry into prison employment.

There is another reason, viz.: the member of the Employees' Retirement System has not done any of the things which would terminate his membership in said system as provided for under subdivision 9 of section 52 of the Employees' Retirement Law, which reads as follows:

> 9. Should the State service of any member, in any period of ten consecutive years, amount to less than five years, or should he withdraw all or part of his accumulated contributions, or should he die or be retired on a pension, he shall thereupon cease to be a member.

Your questions all comprehend the same difficulty, but since you have placed your inquiry in categorical style, I will now answer them upon the basis of the above general statement.

Question 1-a

He remains a member of the Employees' Retirement System.

Question 1-b

He remains a member of the Employees' Retirement System and does not automatically become entitled to the retirement provisions of the Prison Law.

Question 1-c

A transfer from service other than prison service would not change the situation.

Question 2

He would remain in the Employees' Retirement System and be entitled to retirement under that system.

Question 3

This is answered in the negative.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(f) Members of the General System May Withdraw and Join Special Systems Newly Made Available for Them (§ 50, subd. 8; § 52, subds. 2, 9; § 72).

COMPTROLLER'S OFFICE, *June* 17, 1921.

HON. CHARLES D. NEWTON, *Attorney-General, Albany, N. Y.:*

DEAR SIR.— Chapters 587, 588 and 595 of the Laws of 1921, being Senate Bills Nos. 1493, 1669 and 1739, respectively, relate to the Military Law, and provide some sort of pension for certain military employees. Several of these military employees are members of the N. Y. S. Employees' Retirement System. When these military employees became members of the Employees' Retirement System they under section 72 waived all rights to any other retirement plan at the expense of the State of New York.

Question: Can these military employees who are members of the Employees' Retirement System and if they were not members thereof, otherwise eligible to retirement under said Military Law, be retired under the Military Laws and withdraw their contributions from the Employees' Retirement System?

Yours very truly,
JAMES A. WENDELL,
Comptroller.

July 6, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.:*

DEAR SIR.— Receipt is acknowledged of yours of the 17th ulto.

Section 19-a of chapter 588 of the Laws of 1921, being an Act to amend the Military Law generally provides:

> § 19-a. Retiring Veterans of the Late Civil War, Spanish-American War and World War and Granting them Pensions. Every soldier, sailor or marine of the army or navy of the United States in the late Civil

> War, Spanish-American War and World War honorably discharged from service who shall have been employed for a period of twenty years or more in the *military or naval service of the State of New York under pay from State funds*, and who shall have reached the age of sixty-four years, may, upon his own request and the approval of the adjutant-general, or upon being incapacitated for performing the duties of his position *after ten years of service*, shall be retired from such employment, and thereafter during his life there shall be paid to him in the same manner and *by the same agency and from the same source* that the salary or wages of his former position were customarily paid to him an annual sum equal in amount to one-half the salary or wages paid to him in the last year of his employment.

There is thus created a pension system covering employees of the Permanent Military and Naval Establishment of the State, who are under pay from State funds.

The Legislature having established the New York State Employees' Retirement System (chapter 741, Laws 1920) was not thereby precluded from establishing another system taking in a special class of employees, some of whom have already joined the system under chapter 741 of the Laws of 1920.

I am not able to find any provision of law or any good reason why a person who, by the terms of a law passed subsequently to chapter 741 of the Laws of 1920, is entitled to be covered by another pension plan and had already joined the system under chapter 741 of the Laws of 1920, cannot withdraw from such system, join the new one and have his contributions to the Employees' Retirement System refunded. To hold otherwise would tend to defeat the clearly expressed purpose of the Legislature in passing chapter 588 of the Laws of 1921 (Military Law). The Legislature knew of the existence of the Employees' Retirement System and most assuredly had it in mind when it provided another system of retirement for those employees in the Permanent Military and Naval Establishment of the State. It might be noted in passing that employees of the Permanent Military and Naval Establishment of the State are not in the Civil Service of the State, as has been frequently held by the courts and the fact that these employees do not, therefore, enjoy the various advantages of the Civil Service Law, might have been one of the considerations in the mind of the Legislature when it created the pension plan covered in the amendment to the Military Law.

I do not believe it can be held that employees covered by the pension system in the Military Law, who may have previously joined the Employees' Retirement System can be said to have "waived all rights to any other retirement plan at the expense of the State of New York," with reference to a system that was not in existence at the time they joined the Employees' Retirement System and which was not at that time even contemplated. The waiver referred to in your letter could not be effective "in future" especially where such waiver did not specifically state that it was to have such an effect. I do not believe that section 72 of chapter 741 of the Laws of 1920 can be construed to mean such a comprehensive waiver as you seem to think.

I am, therefore, of the opinion that the employees of the Permanent Military and Naval Establishment of the State who are members of the Employees' Retirement System, and if they were not members thereof otherwise eligible to retirement under said Military Law, are entitled to be retired under the Military Law as amended and to withdraw their contributions from the Employees' Retirement System.

Very truly yours,

CHARLES D. NEWTON,
Attorney-General.

(g) A Retired Employee May Teach School While Receiving Pension and Annuity (§ 50, subd. 8; § 61, subd. 3).

32 SOUTH HAWK STREET, ALBANY, *July* 11, 1921.

HON. CHARLES D. NEWTON, *Attorney-General, State of New York, Albany, N. Y.:*

DEAR SIR.— I am a graduate of the State College for Teachers and have had twelve years' experience in teaching.

Since April twenty-second, nineteen hundred twelve (1912) I have been employed as a clerk in the State Labor Department. On June sixteenth of this year I was notified that my position was to be abolished and that after July first my services would no longer be required.

According to chapter 365 of the Laws of 1921 I am entitled to draw a pension; I have applied for same and met all necessary requirements.

As I have no position nor means of livelihood at the present time I may find it necessary to return to the teaching profession.

The question now arises as to whether or not I may teach in the public or private schools of this or any other State and at the same time enjoy the benefits of the Employees' Retirement fund.

I therefore ask that you render an opinion covering these circumstances so that I may make some plans by which I may earn my living.

Should your opinion be adverse and the pension discontinued in the event of my teaching, kindly tell me if said pension will be resumed should I cease teaching.

I am submitting the above facts in accordance with your instructions.

Thanking you for your courtesy in this matter, I am

Yours truly,
MARY E. KENNAR.

July 28, 1921.

MISS MARY E. KENNAR, 32 *South Hawk Street, Albany, N. Y.:*

DEAR MADAM.— Receipt is acknowledged of your letter of July 11th asking for my construction of article IV of the Civil Service Law, which is the article in reference to the retirement of officers and employees in the State Civil Service.

I note from your letter that you were employed as a clerk in the State Labor Department or Industrial Commission from April 22, 1912, to June 30, 1921, and that previous to that you had 12 years' experience in teaching. I assume that the teaching was in the public schools.

You were a member of the State Retirement System and have applied for the retirement privileges given you under subdivision 8 of section 50 and subdivision 3 of section 61, as amended by chapter 365 of the Laws of 1921.

You ask for an opinion as to whether or not you may teach in the public or private schools of this or any other State and at the same time enjoy the benefits of the retirement fund.

The subdivisions mentioned read as follows:

> 8. State service shall mean service, whether appointive or elective, as an official, clerk, or employee of the State of New York, including service as teacher in the public schools of the State of New York, however paid, and any other branch of service and any former city or county institution now a State institution, so far as such service is paid for by the State of New York or by any such institution, except service on or after the first day of January, nineteen hundred and twenty-one, while such employee is, or may be, entitled to benefit by existing laws providing for pensions or annuities for civil service employees wholly or partly at the expense of the State of New York or of any political subdivision thereof.

3. Should a member be discontinued from State service through no fault of his own after having completed twenty years of total service, he shall be paid, as he may elect, as follows:

(a) The amount of his accumulated contributions, or

(b) An annuity of equivalent actuarial value to his accumulated contributions, and, in addition, a pension beginning immediately having a value equal to the present value of a pension beginning at age sixty of one-seventieth of his final average salary multiplied by the number of his years of prior service, plus one-one hundred and fortieth of his final average salary multiplied by the number of his years of service as a member.

I find nothing in the statute prohibiting the resumption by you of teaching in the public or private schools of this or any other State and at the same time enjoying the benefits of the retirement fund. If you should resume teaching in the public schools you would not in my opinion reenter the State service within the meaning of the definition given in subdivision 8 of section 50, for you would then be an employee who is or may be " entitled to benefit by existing laws providing for pensions and annuities for civil service employees wholly or partly at the expense of the State of New York or of any political subdivision thereof," and you would also be prohibited while so employed from reentry into the Retirement System as a contributing member under subdivision 2 of section 52 which contains similar provisions. In other words, you would be such an employee who is or may be entitled to benefit under a teachers' retirement fund.

In the foregoing statement, I have not intended to cover teaching in a State Normal School or Teachers' college.

Please understand also that I make no ruling at this time as to whether or not you might join a local teachers' retirement fund, nor do I rule on the question of your reentering into the State service as a clerk for one of the State departments. The latter situation does not seem to be specifically covered by the statute, but I think it would be entirely proper for the Attorney-General in such case to advise the Comptroller that he could make a ruling permitting reentry into the State service under similar regulations to those provided for other persons who become entitled to retirement benefits and who are later restored to active service.

Very truly yours,
CHARLES D. NEWTON,
Attorney-General.

(h) Final Average Salary is Based upon Last Five Years of Service or upon Total Service if Such Total is Less Than Five Years (§ 50, subd. 14).

COMPTROLLER'S OFFICE, *December* 17, 1920.

HON. CHARLES D. NEWTON, *Attorney-General, Albany, N. Y.:*

DEAR SIR.— Section 50, part 14 of chapter 741 of the Laws of 1920 defines " Final average salary."

In the following examples, what is the final average salary?

1. A was employed in a State department 11 years ago at a salary of $3,000. He has not done any work for the State of New York in the past 11 years. He began work for the State on December 13, 1920, and will be employed until January 15, 1921, on an annual salary of $6,000. What will be his final average salary as of January 15, 1921?

2. B's last employment was in the year 1918, ending December 31st. For the calendar years 1916, 1917, 1918, he was employed at $4,000 per year and received $12,000 for the three years mentioned. He began service on December 1, 1920 at a salary of $2,000 per annum and received $166.66 for the month of December. If B retires on January 1, 1921, what will be his final average salary?

Yours very truly,
EUGENE M. TRAVIS,
Comptroller,

February 7, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.*

DEAR SIR.— I have given careful consideration to the questions raised in the letter from your department dated December 17, 1920.

I have come to the conclusion that the word "immediately" in subdivision 14 of § 50 does not affect the meaning of the sentence in which it is used. The provision is: "Final average salary shall mean the average annual compensation of a member for State service during his five years of State service immediately preceding his date of retirement." There is some ambiguity, due to the word "immediately," but I think that word may be overlooked without changing the meaning of the paragraph.

"*His* five years of *state service* * * * preceding his date of retirement" refers to the last five years of time in which the employee was in State service, excluding periods when he was not in State service.

I therefore answer your concrete questions as follows:

A was employed for 33 days at the rate of $6,000 per annum, before that he was employed at the rate of $3,000 for more than five years — the length of time intervening makes no difference. His final average salary would be one-fifth of what he received at the rate of $6,000 for 33 days plus what he received at the rate of $3,000 for five years less 33 days.

B was only employed three years and one month altogether — his total receipts were $12,166. His final average salary is $12,166 divided by three and one-twelfth.

Yours very truly,

CHARLES D. NEWTON,
Attorney-General.

(i) A State Employee Whose Posiition is Abolished "Reenters" the Service upon Appointment to Another Position (§ 52, subd. 1, par. a).

COMPTROLLER'S OFFICE, *March* 24, 1921.

HON. CHARLES D. NEWTON, *Attorney-General, Albany, N. Y.:*

DEAR SIR.— With reference to section 52 of subdivision (a)* of the Employees' Retirement System Law:

The Superintendent of Public Works suspended two men from duty on February 19, 1921, their positions having been abolished. They were reinstated as guards on March 19, 1921 in the competitive class of the Civil Service.

Question: Are they "Re-entrants" as mentioned in subdivision (a) and must they become members of the Employees' Retirement System after six months of service?

It should be borne in mind that these employees had certain Civil Service rights in that they were placed on the preferred list and must have been appointed to similar positions held by them at the time of severance from State service before any persons could be appointed from a regular eligible list for the same service. At the time they had the right to elect and did elect not to become members of the Employees' Retirement System. The question arises as to whether they still have this right or are they compelled to become members after six months of service?

Yours very truly,

JAMES A. WENDELL,
Comptroller.

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* Reference should read paragraph "a" of subd. 1 of § 52.

March 29, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.:*

DEAR SIR.— Receipt is acknowledged of yours of the 24th inst. inquiring as to the application of section 52, subdivision (a) of the Employees' Retirement System Law.

When the two men in question were suspended on February 19, 1921, because their positions had been abolished, they ceased to be employees of the State, their salaries ceased, they were dropped from the payroll of the department and they were not on a leave of absence without pay.

The fact that under the Civil Service Law, they were entitled to be placed on a "preferred list" for possible reappointment to a position similar to the one previously held by them does not change the situation. They had ceased to be employees of the State, and in the course of events might never be reappointed and when they were appointed to the new position they entered as original appointees.

It is, therefore, my opinion that these men must become members of the Employees'. Retirement System after six months of service, in accordance with subdivision (a) of section 52 of chapter 741 of the Laws of 1920.

Very truly yours

CHARLES D. NEWTON,
Attorney-General.

(j) Retirement May Occur Not Less Than Thirty Days After Application (§ 62, subd. 1).

March 29, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.*

DEAR SIR.— Receipt is acknowledged of your letter of March 25th inquiring as to the meaning of a part of subdivision 1 of section 62 of chapter 741 of the Laws of 1920.

Section 62, subdivision 1 provides as follows:

> Any member in state service may retire upon written application to the State Comptroller setting forth at what time, not less than thirty days subsequent to the execution and filing thereof, he desires to be retired, provided that said member at the time so specified for his retirement shall have attained the age of sixty years.

When the Legislature passed the law it might have had in mind as you suggest "to protect the administrator of the employees' retirement system against a rush of retirements or against an unreasonable request for retirement immediately."

But is seems to me it had particularly in mind, and it was its intention to carefully fix a time definite and certain when applications for retirements must be filed and a period before the expiration of which retirements could not be effective, and this for the purpose of enabling the necessary investigations, adjustments, etc., to be made by the director of the retirement system and such re-adjustments, appointments, etc., that might be necessary for the superior of the retiring employee to make.

I am, therefore, of the opinion that the thirty day provision is mandatory, and that an application for retirement must be in the hands of the State Comptroller thirty days before the person can be retired.

Very truly yours,

CHARLES D. NEWTON,
Attorney-General.

OTHER LAWS

(a) School Superintendents Are Members of the State Teachers' Retirement System

February 5, 1921.

HON. JAMES A. WENDELL, *State Comptroller, Albany, N. Y.*

DEAR SIR.— I have considered the question submitted by you and the Department of Education with respect to the case of Professor Hamilton, Superintendent of the New York State School for the Blind. The Education Law (§§ 1095–1099) provides for retirement of teachers in State institutions. The word "teachers" as used in the Education Law generally, includes superintendents. They are really nothing but head teachers. In private schools ordinarily teachers are called masters and the superintendent is called the head master. The fact that the superintendent may do very little actual teaching does not make him any the less a teacher within the generally accepted sense of the word. It would seem absurd to say that a teacher in an institution being accorded the benefits of the pension system provided in the Education Law, after serving for a considerable time, would suddenly become excluded from those benefits by being promoted in his own institution.

I understand that heretofore other superintendents of state schools have been retired under the Education Law Pension, establishing a precedent and I see no reason why this precedent should be upset.

I advise you that in my opinion the Superintendent of the State School for the Blind is a teacher within the meaning of §§ 1095–1099 of the Education Law, and being eligible to the pension therein provided, is not eligible to membership in the State Employees' Retirement Fund.

Yours very truly,

CHARLES D. NEWTON,

Attorney-General.

(b) Ten Years Continuous Service Is Prerequisite to Retirement of Civil War Veteran Employed in Adjutant General's Office.

You ask whether or not ten years' service in the office of the Adjutant-General is a condition precedent to the retirement of a Civil War veteran employed in your office in case of incapacity under the provisions of chapter 557 of the Laws of 1918.

Chapter 557 of the Laws of 1918 added section 19-a to the Military Law which provides that:

> Every soldier, sailor or marine of the army or navy of the United States in the late civil war honorably discharged from the service who shall have been employed for *a continuous period of ten years or more* in the office of the adjutant-general of the state of New York and who shall have reached the age of seventy years may, upon his own request and the approval of the adjutant-general, or upon being incapacitated for performing the duties of his position, shall be retired from such employment, and thereafter during his life the adjutant-general shall pay to him in the same manner that the salary or wages of his former position were customarily paid to him an annual sum equal in amount to one-half the salary or wages paid to him in the last year of his employment; provided, however, that the amount so to be paid to such retired veteran shall not exceed the sum of one thousand dollars per annum.

I am of the opinion in order that a veteran of the Civil War, who is an employee of the Adjutant-General's office, may be retired under article 1, chapter 41 of the Laws of 1909, constituting chapter 36 of the Consolidated

Laws as amended by chapter 557 of the Laws of 1918, it must appear that such veteran has been employed for a continuous period of ten years or more in the office of the Adjutant-General of the State of New York. This service of ten years is an absolutely necessary condition precedent to his right to retirement, and without which, he does not come under the provisions of such act.

March 12, 1921.

CHARLES D. NEWTON,
Attorney-General.

To EDWARD J. WESCOTT, *The Adjutant-General's Office.*

(c) An Ex-Service Man Undergoing Vocational Training May Operate a Motor Vehicle Without Chauffeur's License.

A Mr. Neubauer of Schenectady states than an ex-service man, twenty-five years of age, is in his shop learning the sign painting trade. That said person receives no compensation from him but is paid by the government for this vocational training. He further states that there are times when it is necessary for the person so engaged in learning the trade to operate a Ford motor car owned by Mr. Neubauer. You ask for my opinion as to whether it is necessary for the said ex-service man to be licensed as a chauffeur to entitle him to operate said car.

Section 289, subd. 4 of the Highway Law provides that:

> Unlicensed operators or chauffeurs cannot drive motor vehicle. An operator's license shall not entitle a person to drive a motor vehicle as an employee or for hire. No person shall operate or drive a motor vehicle upon a public highway of this state after the first day of August, nineteen hundred and seventeen, unless such person shall have complied in all respects with the requirements of this section and of section two hundred and eighty-two of this act; * * *

Section 281 of the Highway Law defines the term "chauffeur" as follows:

> * * * The term 'chauffeur' shall mean any person operating or driving a motor vehicle, as an employee or for hire. * * *

The question to be determined is whether or not an ex-service man receiving vocational training and who receives no compensation from the person from whom he is receiving such instruction, is a "chauffeur" within the meaning of the term as defined in section 281.

It seems to me that this question should be answered in the negative. It is clear that he is not hired by Mr. Neubauer to perform any duties, neither is he paid by the government to operate a motor vehicle, but is merely made an allowance to cover his maintenance and support while receiving vocational instruction, nor is he employed by Mr. Neubauer within the meaning of the term as used in the statute for the relation of master and servant does not exist. It is not easy to define the relationship that exists between them, but it seems to me, under the facts presented, that the ex-service man in operating a Ford car in connection with his instruction in a vocational trade is not operating or driving a motor vehicle as an employee or for hire, and he is, therefore, not required to secure a chauffeur's license.

February 4, 1921.

CHARLES D. NEWTON,
Attorney-General.

To JOHN J. LYON, *Secretary of State.*

(d) An Unpaid Volunteer May Drive Motor Fire Apparatus Without Chauffeur's License.

Must drivers of motor fire apparatus be licensed as chauffeurs?

If the persons driving the motor fire apparatus are not employed by the village and are not paid for the performance of such duty, but perform the same gratis, they do not fall within the definition of the term "chauffeur" as defined in section 281 of the General Highway Law and, therefore, need not be licensed as chauffeurs.

July 11, 1921.

CHARLES D. NEWTON,
Attorney-General.

To J. ARCHER RACKETT, *Greenport, L. I.*

(e) Armistice Day as Appointed by President and Governor Is a Legal Holiday.

Must a county clerk's office be closed November 11th, Armistice Day?

In my opinion this day is a legal holiday.

Section 24 of the General Construction Law, provides:

> Holidays; half-holidays.— The term includes the following days of each year; * * * each day appointed by the President of the United States and the Governor of this state as a day of general thanksgiving. general fasting and prayer or other general religious observances * * *.

I cannot find that any occasion has heretofore arisen to construe the quoted part of the statute as applicable to other than the general Thanksgiving Day customarily set for the last Thursday of November. However. I have before me the proclamation of the President under date of the 4th of November setting aside Armistice Day as a holiday in memory of those who gave their lives in the late war as typified by the Unknown and Unidentified Soldier, and recommending the Governors of the several States proclaim that the people pause in their usual pursuits as a mark of respect on this solemn occasion. The President recommends that all public and church bells throughout the United States be tolled between 11:45 and noon, and that from noon for two minutes all devout and patriotic citizens of the United States indulge in a period of silent thanks to God for these valorous lives and of supplication for His divine mercy and for His blessings upon our beloved country.

In accordance with these recommendations I understand the Governor to-day will likewise issue a proclamation.

I think there can be no doubt, therefore, that Armistice Day is a day appointed by the President and by the Governor as a day of general religious observances, and also as a day of general thanksgiving and prayer.

I am, therefore, of the opinion that this is a legal holiday within the State of New York, and that the county clerk's office is not required to be kept open.

November 7, 1921.

CHARLES D. NEWTON,
Attorney-General.

To H. H. KENT, *Herkimer, N. Y.*

(f) Ambulance Company Armory Employees Are Entitled to Five Dollars Per Day.

September 20, 1921.

HON. GEORGE R. FEARON, 935 *University Block, Syracuse, N. Y.*

MY DEAR SENATOR.— I acknowledge receipt of your letter of the 17th instant asking for an opinion with reference to section 189 of the Military Law. You wish in particular to be advised with reference to the maximum pay of employees in the armory of an ambulance company.

Section 189, so far as this matter is concerned, has been amended to read as follows by chapter 587 of the Laws of 1921:

> § 189. Compensation of employees in armories. The persons appointed under the provisions of the two preceding sections shall receive compensation for the time actually and necessarily employed in their duties as follows: (a) Superintendents, not to exceed six dollars per day. (b) Armorers, engineers, electricians and technical laborers employed in armories occupied as division or brigade headquarters or by a regiment, battalion, squadron or similar organization, not to exceed six dollars per day. (c) Armorers and technical laborers employed in armories, other than those specified under (b), assistant engineers, expert laborers and firemen, not to exceed five dollars per day. (d) Laborers, other than those specified under (b) and (c), not to exceed four dollars per day. * * *

If the employees in question are to receive a maximum pay of $6 per day, they must qualify under subdivision (b) above. The question presented is, therefore, whether or not the armory of an ambulance company is "occupied as division or brigade headquarters or by a regiment, battalion, squadron, or similar organization, * * *." It does not appear to me that an ambulance company is a "similar organization" to a regiment, battalion or squadron. A regiment, battalion and squadron are all made up of more than one company.

My opinion is further based upon the fact that section 189 previous to this amendment and as previously amended by chapter 628 of the Laws of 1920 contained the following provision:

> * * * When employed in armories or arsenals housing or quartering brigade headquarters, regiments, battalions, squadrons, batteries, naval battalions, field hospitals, ambulance companies, or signal corps, armorers, janitors, electricians and engineers not to exceed six dollars per day; * * *

That provision was, I think, correctly construed in the letter to the Deputy County Treasurer of Onondaga county to which you refer.

I am, therefore, of the opinion that the employees in question come under subdivision (c) of section 189 as now in force. I might add that I have taken this matter up with the Armory Commission and their understanding is that the amendment intended to reduce salaries in small armories such as the one in question.

I enclose herewith copy of chapter 587 of the Laws of 1921.

Very truly yours,

CHARLES D. NEWTON,
Attorney-General.

(g) Railroad Police May Carry Revolvers Without License and Make Arrests Beyond Railroad Confines.

July 26, 1921.

MAJOR GEORGE F. CHANDLER, *Superintendent of Department of State Police, Albany, N. Y.*

DEAR SIR.— We acknowledge receipt of your letter of July 22nd enclosing letter from Murray E. Rector, which is herewith returned.

You ask for our construction of chapter 72 of the Laws of 1921, amending section 88 of the Railroad Law, relative to appointment, qualification and jurisdiction of railroad policemen. You particularly wish advice with regard to powers of such policemen to make an arrest outside of railroad property. The act reads in part as follows:

> * * * with all the powers of a policeman in cities and villages, for the preservation of order and of the public peace, and the arrest of all persons committing offenses upon the land or property of the corporation owning or operating such railroads; * * *.

We do not believe that this confines the power to make arrests on the land or property of the railroad corporation, provided the crime was committed upon the land or property of said corporation. Any other construction of the matter would seem to create a condition where such policemen could not carry out the purposes for which they were appointed. For instance, one of the commonest crimes committed upon railroads is that of breaking into and stealing from freight cars. These freight cars are often located at places where the railroad right-of-way is very narrow. To say that an arrest for such a crime must be confined to the exact right-of-way of the railroad corporation would, in our opinion, make this statute unworkable.

You also ask with regard to rights of such policemen to carry pistols etc. We enclose herewith copy of chapter 297 of the Laws of 1921, amending section 1897 of the Penal Law. You will note that subdivision 13 makes this section of the Penal Law inapplicable to policemen, peace officers, etc., and we are of the opinion that railroad policemen appointed by you under the provisions of section 88 of the Railroad Law are such officials.

Very truly yours,

CHARLES D. NEWTON,
Attorney-General.

(h) Fines for Violation of the Compulsory Education Law Apply to Support of Town Poor.

October 25, 1921.

HON. THOMAS COLBY, *County Treasurer, Schoharie, N. Y.*

DEAR SIR.— Your letter of October 19, 1921, requesting an opinion as to the disposition of a fine imposed for a violation of the Compulsory Education Law, paid into your office by the supervisor of the town of Wright, was duly received.

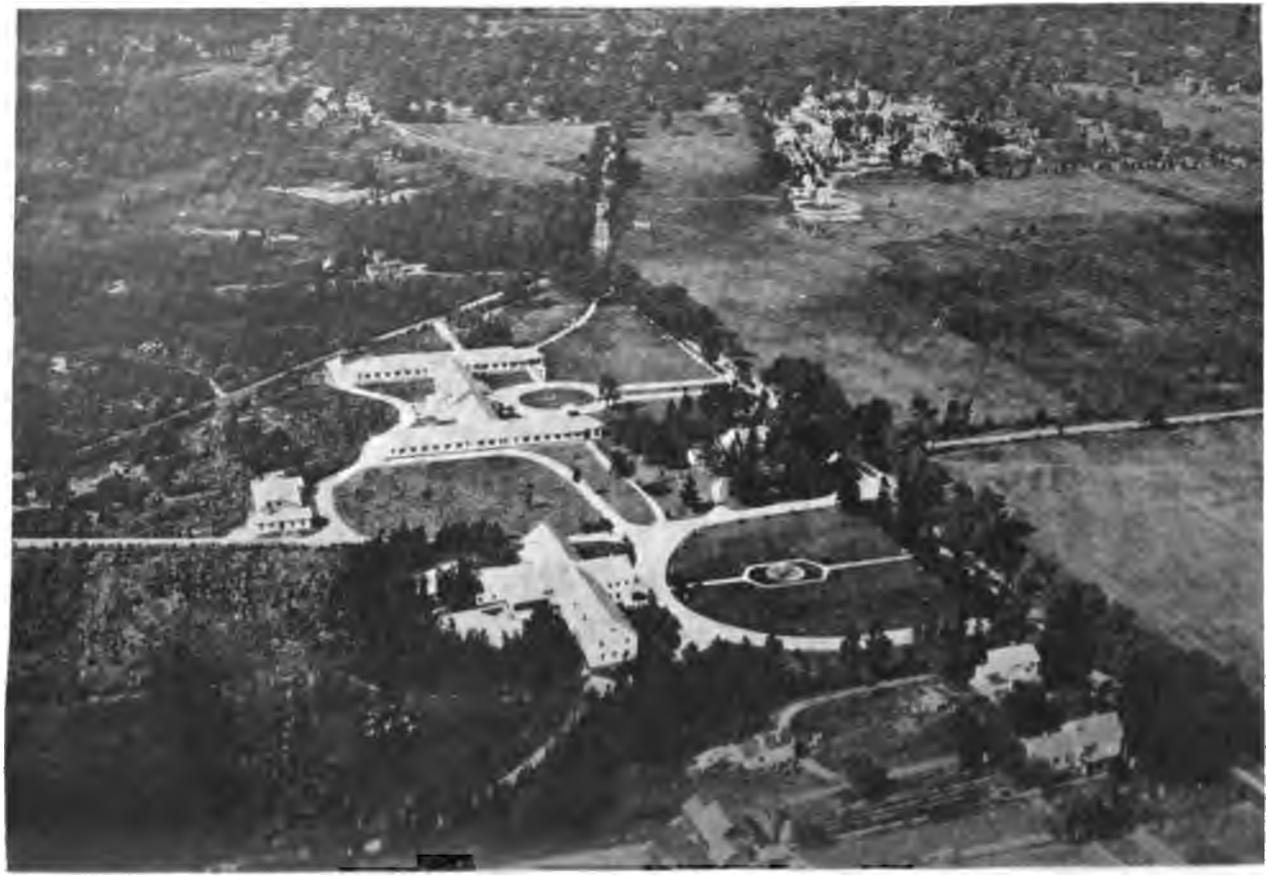
In reply, I beg to advise you that fines imposed for any violation of the Compulsory Education Law are to be disposed of by magistrates of your town in the same manner as fines imposed for the violation of other statutes generally, and the disposition of such fine is provided for in subdivision 21 of section 12 of the County Law, which reads as follows:

> 21. The board of supervisors shall have power to direct the payment by justices of the peace, of all fines and penalties imposed and received by them, to the supervisors of the respective towns, on the first Monday of each month, and to direct justices of the peace to make a verified report of all fines and penalties collected by them to the board of town auditors of their respective towns on the Tuesday preceding the annual town meeting. Upon such payment as herein prescribed to the supervisor of any town, he shall immediately pay over such part of such fines and penalties to any person or corporation who shall be entitled to receive the same by virtue of any statute, special or otherwise. The residue of such amount shall be applied to the support of the poor of such town. This subdivision shall not apply to the county of Kings.

As I write above, there is no statute, special or otherwise, that makes provision for the payment of the fine you mention to any person or corporation and, therefore, it is to be applied, according to the provisions of this subdivision quoted above, to the support of the poor of such town and its disposition is similar to that of other fines received at your office. The provisions contained in article 33 of the Education Law relating to the disposition of fines for the benefit of common schools, have no application to the fine received by you, mentioned in your letter.

Yours very truly,

CHARLES D. NEWTON,
Attorney-General.



Saratoga Springs Reservation from the air. The building shaped like an "H" in the left center is the famous Washington Bath House. Below it is the Lincoln Bath.

Legislative Document (1922) No. 29

STATE OF NEW YORK

Conservation Commission

ELEVENTH ANNUAL REPORT

FOR THE YEAR 1921

ALBANY
J. B. LYON COMPANY, PRINTERS
1922

STATE OF NEW YORK

CONSERVATION COMMISSION

ELLIS J. STALEY	*Commissioner*
ALEXANDER MACDONALD	*Deputy Commissioner*
HERBERT F. PRESCOTT	*Secretary*

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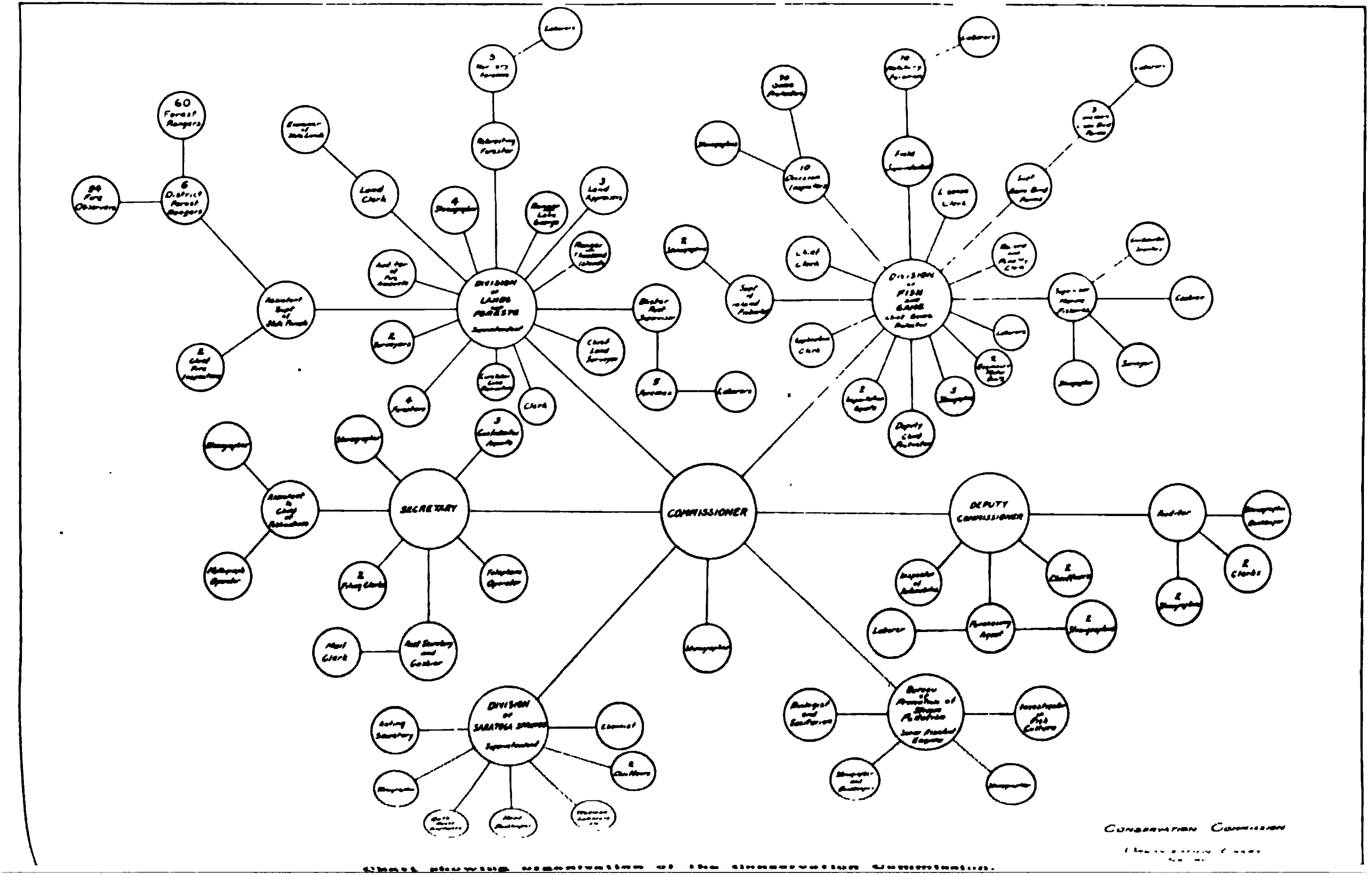


Chart showing organization of the Conservation Commission.

ELEVENTH ANNUAL REPORT

OF THE

CONSERVATION COMMISSION

To the Legislature:

Pursuant to statute, the Conservation Commission begs to submit, for the consideration of your honorable body, a report of its work for the past year, as well as certain recommendations which it trusts will meet with your approval.

In the text of this report the discussion of the work of the Commission has been carried down to the end of the calendar year, December 31, 1921. Financial and other tables which are directly related to the fiscal year are, however, carried only to the end of the fiscal year, June 30, 1921. This method of preparing the report has been adopted because of the fact that the Legislature each year must consider many questions of conservation which require knowledge of the Commission's doings down to date, and not merely information that is already six months old.

Under the statute the work of the Commission is grouped into four divisions. This report accordingly considers each division in turn, preceding them, however, with a discussion of general topics. This is followed by the report of the Conservation Bureau of the Attorney General's office and the Annual Financial Statement of the Commission. The arrangement is as follows:

I. General Topics.
II. Division of Fish and Game.
III. Division of Lands and Forests.
IV. Division of State Reservation at Saratoga Springs.
V. Division of Waters.
VI. Conservation Bureau, Attorney General's Office.
VII. Financial Statement of the Conservation Commission.

GENERAL TOPICS

For the fiscal year ending June 30, 1921, the receipts of the Conservation Commission were the largest in its history.

During the six months ending December 31, 1921, as a result of statutory changes and various administrative economies, there was a decrease in expenditures and the appropriations for the coming year, except for an item for reforestation work, are reduced.

Since July 1, 1921, through cooperation with the Federal government and adjacent states, fire protection has been extended to new areas of forested land in the eastern, southern and southwestern portions of the State, until it includes more than ninety per cent of the State's entire area of forest land.

By the adoption of new apparatus for fighting forest fires the cost of this work has been reduced and greater protection given to the forests.

A bureau for the prevention of stream pollution has been organized, without the addition of any new employees, for the purpose of working out a practical plan for conserving the State's aquatic resources through the prevention of the pollution of the waters of the State by sewage and industrial wastes.

Continuation of experiments looking to the artificial propagation of oysters, during the year demonstrated the practicability of obtaining "sets" of oysters on artificial collectors on a scale that promises the rehabilitation of the State's declining oyster industry at very small cost.

During the year the Commission was represented at two important conservation conferences. The first of these, which met at Fairport, Iowa, on

June 8, had for its object the preparation of a practical plan for the conservation of the country's aquatic resources. The second met in Washington on June 16 to consider measures for the prevention of stream pollution and the protection of migratory fishes.

Nearly 25,000 acres have been added to the State's forest preserve, nearly all of which is of the virgin forest type.

Trespass upon the forest preserve during the year has been negligible, the cases being very few in number and trifling in amount, the total damage amounting to less than $200.

The State nursery at Saratoga has been increased in size until it is now the largest of its kind in the country, and contains nearly 19,000,000 trees for reforestation purposes. The inventory of stock in all the nurseries is 23,310,000 trees, an increase of 6,390,000 over a year ago.

In the work of checking the white pine blister rust which threatens the white pine industry of the entire country, 20,000 acres of land have been covered by employees of the Commission engaged in the eradication of currant and gooseberry bushes to prevent the spread of the rust.

A meeting of the Association of State Foresters was held in September, which was attended by foresters from every state having white pine forests, and by representatives of the United States Forest Service. Three days were devoted to a tour of the white pine forests in the northeastern part of the State and to a careful study of the effects of the disease and the methods used by this Commission to check it. The seriousness of the menace of the blister rust to the pine forests of the country was recognized by all, and the Commission's preventive methods approved.

In the development of the recreational possibilities of the Adirondacks, the Commission has built new open camps and established camp sites along the highways as far as the supply of ranger labor would permit, and has distributed approximately 100,000 recreation circulars showing the possibilities of the Forest Preserve as a playground and explaining its proper use.

By the use of improved methods in fighting fires, the losses from forest fires were held at a comparatively low figure, despite the fact that the season of 1921 up to the middle of September was the worst since the present fire protective system was organized.

As a result of a law enacted by the Legislature of 1921, the State Police were given the duties of game protectors and the regular force of protectors was reduced from 131 to 90. There has been the closest cooperation between this Commission and the Department of State Police during the six months that this law has been in effect, to thoroughly familiarize the troopers with the new duties, and to maintain an efficient enforcement of the game laws.

Because of a perfected organization and the greater efficiency of labor, it has been possible to administer the Saratoga Springs reservation with greater economy than during previous years, and there has been a constant increase in the patronage of the baths, this year's receipts exceeding those of any previous year. The results of the perfection of the system of operation were even more marked during the last six months of the calendar year than during the preceding twelve months covering the fiscal year.

By chapter 579 of the Laws of 1921, the Conservation Commissioner was made Chairman of the New York Water Power Commission. In addition to the Conservation Commissioner, this Commission consists of the State Engineer and Surveyor, the Attorney-General, the Temporary President of the Senate and the Speaker of the Assembly. It is empowered to issue licenses authorizing the diversion and use for power or other purposes of any of the waters in which the State has a proprietary right or interest. The law limits the term of a license to fifty years and provides that each license covering water power sites or lands, the title to which is vested in the State, shall require the payment by the licensee of an annual charge measured by a fair rental value thereof; and every license shall require the payment by the licensee of an annual charge for the purpose of reimbursing the State for the cost of administering the provisions of the law.

By chapter 499 of the Laws of 1921, the Conservation Commissioner is made a member of the Water Power Commission, which contains also the State Engineer and Surveyor and the Attorney-General, and upon the organization of this Commission was elected Chairman. This Commission administers the Conservation Law in relation to engineering and construction work, including river improvement, river regulation, drainage and water supply, and, under the act creating it, all engineering work in connection with these projects and jurisdiction over docks and dams is placed in the office of the State Engineer and Surveyor. This Commission takes over the work formerly in the Division of Waters in the Conservation Commission, and the employees of this division have been transferred to the office of the State Engineer and Surveyor.

TWO IMPORTANT CONFERENCES

Two important conferences were held in June that undertook the formulation of a practical and economical plan for the greater beneficial use of the aquatic resources of the entire country. The attendance at both was broadly representative, and the discussions emphasized the need of close cooperation among the states in dealing with a number of important conservation problems.

The Fairport Conservation Conference

State and governmental officials, university professors and practical business men were called in conference by Secretary of Commerce Herbert Hoover to discuss the question of conservation of resources of interior waters.

The conference, convened at the U. S. Fisheries Laboratory, Fairport, Iowa, June 8–10, met for the support of no pet project other than service of the common good. The topics for discussion related to the broad phases of the conservation of waters — the fisheries, navigation, forests, health. Discussion was focused not only upon those aspects of the problem which limit directly the abundance and purity of water for its legitimate uses, but which operate indirectly and in far-reaching ways to disturb the balance between the natural restoration of resources and the continued depletion or exhaustion of them by legitimate industries of conflicting group interests.

An excerpt from the announcement states:

> " Our water courses, lakes and ponds not only should serve as avenues of transportation and channels for removal of reservoirs for storage of surplus surface drainage, but also should continue to provide food and other necessities of life and to furnish the means of essential recreation. Yet it is evident that with growth in population and with progressive industrial development, the public waters are becoming decreasingly fit to serve these latter ends. It is important, then, to ascertain if the decline in usefulness of the waters is inevitable, and, if it is not, to discover and apply the means of bringing about improvement."

Problem of Fish Culture. Problems relating to the fisheries received the major share of attention. It was shown that the area of water in which fish may live is decreasing because of pollution, increased turbidity, increasing floods, deforestation, drainage projects, etc.; that intensive fish culture, which is the fish culture that must be considered now and in the future, should be founded upon a better knowledge of the biological balance existing in fishing areas of streams and lakes; crop estimates of the water, including both plants and animals, are essential facts to be learned; the effect of either the increase or decrease of the food supply and the fish population; the disturbance produced by pollution.

In the matter of fresh water shell fisheries, the present status of the pearl button industry of the middle west reflects in a striking way the effects of the decline of an abundant natural resource within a single generation. Large mussel beds formerly occupied the main stream of the Mississippi River. They are found now in quantity only within limited areas of its tributaries. This industry, which utilizes the mussel for buttons, is vitally interested in remedial conservation measures which will not only restore the mussel beds but increase the number of fish in the streams, the fish being essential to the propagation of the young mussel (glochidium) which, as an obligate parasite, passes its early stages of growth on the gills of fish.

Better Coordination of Effort Needed. In a letter to the conference, the practical measures now under way in the New York State Conservation Commission for the better conservation of our aquatic resources were outlined and the need of better coordination of effort pointed out. Such problems were the preservation of natural forests and reforestation to protect the headwaters of streams and to regulate the flow of rivers; the problems of pollution of lakes, rivers and streams by sewage and industrial wastes, each demanding study and investigation of the effect upon the health of the people and upon the fish life; the utilization of artificial methods in fish propagation to augment the decreasing natural supply of game and market fish; recreational and educational projects.

The conference afforded opportunity for interchange of ideas among persons interested in aquatic resources from different points of view. It did not unfortunately formulate any plans of procedure which may be immediately followed to further progress in conserving resources of interior waters. Various resolutions, however, were adopted urging union of effort to secure adoption of appropriate conservation measures, the reconciliation of conflicting group interests, the promotion of a trained personnel to prosecute investigations, and the direction of a campaign of education to help solve the problem of ignorance and indifference to conservation measures.

Pollution and Fishery Problems

The conference at Washington, D. C., on June 16, 1921, called by Secretary Hoover to consider measures for the prevention of pollution and other conservation measures relating to the fisheries, emphasized the importance of this problem to the Atlantic States. The interests represented at the conference are classified as follows:

Representatives	
1	Secretary of Commerce
5	U. S. Bureau of Fisheries
2	U. S. Public Health Service
1	U. S. Army Engineers
1	U. S. Bureau of Navigation
1	U. S. Bureau of Chemistry
3	Senators from New Jersey and Virginia in person, and South Carolina by secretary
9	Congressmen from Maine, New Jersey, Maryland, Virginia, California, and Ohio
15	State Commissions from Maine to Louisiana
25	Fishing industries (producers)
8	Associations — commercial, fish and game, and anglers
3	Fishery publications
Total 72	

The morning session was devoted to the consideration of water pollution. The Senator from New Jersey spoke on the great importance of oil waste as affecting fire hazard and damage to shore property and bathing beaches, as well as its relation to fisheries. The Surgeon-General of the U. S. Public Health Service described pollution investigations made by the Federal Government, and the Chief of Engineers of the U. S. Army defined the jurisdiction of the Army Engineers over navigable waters. Representatives from the State commissions confirmed the evils of pollution in their respective states, but few as yet had taken active measures toward its prevention. Producers recognized pollution as the greatest menace facing the fishing industries today, and conservationists from the various associations strongly urged Federal action. Tersely summing up these opinions, Secretary Hoover appointed a committee to shape appropriate resolutions.

Since New York State has been recognized as the leader in constructive measures for the prevention of stream pollution, the letter addressed to the Conference from this Commission was received as a guide for future effort and is, therefore, included here:

"The great popular interest in the subject of pollution of waters, and the recent official activity in considering measures of prevention, have brought many requests to the Conservation Commission which has been a pioneer in this phase of water conservation. When it is considered that water of suitable quality is required in every field of human activity and is vital to life itself, popular interest in public waters seems entirely natural. When it is further considered that this used water must be returned into natural drainage channels as waste, under the simple term "pollution," it is not strange that much confusion has existed in consideration of such a complicated problem. It must be recognized at the outset that the conservation of the quality of water is a united problem broader than any of the special interests involved, requiring the deepest consideration of economic, egal and scientific principles.

"The Conservation Commission of New York State has enjoyed a unique position n its approach to the problem of the conservation of waters. Having broad urisdiction not only over such quantitative regulation as stream flow, drainage, etc., the Commission has also been entrusted with the enforcement of laws for the protection of fish life, and has held joint jurisdiction with the State Board of Health in issuing sewerage permits, approving water supply applications, and in the control over the sanitary quality of shellfish. It is perhaps the first public body to approach the problem of water pollution as a problem in the conservation of the quality of water as a natural resource, and as a result of its investigations has reached the conclusion that the greatest need at the present time is some workable plan for coordinating effectively the efforts of all the interests nvolved."

Following the reading of this letter a few remarks were made, telling the history, ideals, administrative program, organization and results of the work in New York State. It is but fair to say that this work is more considerable than that done by any other single state.

The afternoon session was opened by the Secretary to consider other measures for improving fishing conditions of the Atlantic States and to determine how far the Federal government could act in such beneficial service. A great deal of discussion arose regarding the Federal regulation of the fisheries. Although all welcomed the useful offices of the Federal government in preventing pollution such as oil wastes, discharged from oil-burning steamers, both the state commissions and the industries declined to endorse any suggestion of Federal regulation of the fisheries. Where conflicting laws interfered with the broader problem of conservation of a fishery involving several states, it was the opinion of the conference that the Secretary of Commerce could, by calling together the representatives of the states concerned, formulate consistent legislation for recommendation to the various states.

The following resolutions were adopted at the evening session:

"WHEREAS, At the conference of State Fish Commissioners, fish producers and anglers of the Atlantic and Gulf Coasts called by the Secretary of Commerce on June 16, 1921, the men from all the States represented gave full consideration to the pollution problems confronting the fisheries and the question of federal control of fishing operations — the following resolution was unanimously adopted as the concrete expression of the conference:

"*Be it resolved.* That the pollution of our waters by trade waste of all kinds, raw sewage and all other substance deleterious to the aquatic life, and particularly oil pollution from the oil stations and refineries and the discharge from small and arge oil using and carrying vessels is the most vital problem generally affecting our fisheries for food fish, shellfish and crustaceans, and

"*Resolved,* That unless these conditions are promptly remedied our shore isheries at least will steadily decline and in a few years be almost altogether ruined.

"*We therefore urge* immediate work by the Department of Commerce in investigating conditions in the producing districts and the prompt passage of remedial egislation by Congress, and

"*Be it further resolved,* That on the question of general Federal control of the migratory fishes we make the following recommendation:

"That the Department of Commerce call from time to time conferences with the governors of various states in conjunction with the state fish commissioner with the view of suggesting uniform legislation by the various states for the protection of such varieties of migratory fish as may be threatened with extinction through pollution or any other causes."

Upon further suggestions being requested, the representative from New York State expressed the opinion that other agencies should be recognized in the attack upon stream pollution and that some effort should be made to coordinate these agencies. Surgeon-General Frost of the U. S. Public Health Service endorsed this suggestion, stating that the work of the Service was of fundamental nature and of general value in all pollution studies.

After considering the steps that had been taken to improve the serious transportation problem which is of such importance to the fishing industries, the Secretary thanked the representatives and adjourned the conference.

It appears, therefore, that in taking up investigations on pollution, the New York State Conservation Commission has maintained its progressive position as leader in conservation. It may be further inferred that the results of this work have been influential in bringing about the conference As a result definite steps will be taken to prevent oil wastes and a basis of cooperation between the states and the Federal government is promised.

STREAM POLLUTION STUDIES

Bureau of Prevention of Stream Pollution. In 1919 the Legislature directed the Commission to make certain studies with regard to the pollution of streams as affecting water supplies and fish life. Appropriations for this purpose have been made from time to time since then. Work was immediately started and has been carried on continuously. After the reorganization of the Commission on July 1, 1921, it became necessary, in order that this work could be concentrated and economically directed, to put it in the charge of a special bureau. The Bureau of Prevention of Stream Pollution was, therefore, constituted July 19, 1921. Russell Suter, Senior assistant engineer, formerly in charge of water supply and sewerage matters, was placed in charge; assisted by William Firth Wells, Biologist and Sanitarian and Emmeline Moore, Ph.D., Investigator in Fish Culture. This bureau has continued previous studies since that time. Work has been directed along the following lines:

Limits of Tolerance of Fish to Wastes. All available information on this subject has been collected, tabulated and is published in this report. These figures will serve as a guide, not only to the game protector in determining whether the law is being violated, but also to the plant owner and plant engineer in fixing on the site for a factory, or in determining what treatment, if any, must be given to the wastes.

Biologic Indicators of Pollution. To assist game protectors and interested citizens in determining whether pollution by organic wastes is of such intensity as actually to injure fish, a study has been made of the plant and animal forms which, if found in a stream, would indicate such a condition.

Skaneateles Outlet. Complaint having been made to the Commission that the fishing in Skaneateles Outlet had been ruined by pollution from mills this stream has been studied. A report on the findings is in progress.

Artificial Propagation of Oysters. Studies made in previous years on the artificial propagation of oysters have been continued with a view to settling on the details of a commercially practical oyster hatchery. Studies have also been made of the possibility by improved methods of spat collection of saving the oyster " set " naturally available.

Oyster Purification. The method of purifying contaminated oysters successfully developed in 1920 has been put into actual use. Oysters thus purified have been sold and a permanent plant for the use of this method is under construction. By the time this report is printed it is probable that this plant will be complete and will have been duly licensed by the Commission.

LIVING INDICATORS OF INTENSITY OF STREAM POLLUTION

Pollution of a stream by sewage and other organic wastes may injure fish by removal of the gaseous oxygen dissolved in the water. This dissolved oxygen is as necessary to fish as is the oxygen of the air to the ordinary air breathing animal — without it the fish suffocate. By measuring the reduction in the amount of this oxygen, the harm done by the pollution can be determined. Such measurement can easily be made by a chemist, but for the ordinary person some other simpler method of getting this information is required. Certain common and easily recognized water plants and animals show quite accurately the dissolved oxygen content of the water and can be considered as indicators of the degree of pollution of a stream. Without attempting to write a scientific treatise about them, these living indicators are described and figured in the following pages. It is hoped that this information will enable any one to form an intelligent opinion as to the damage that may be caused in a given stream by the discharge into it of sewage or organic waste matter.

Water in a state of chemical purity does not exist in nature. Water flowing in any stream carries in solution certain salts, gases and other compounds and frequently various matters in suspension. Only by the presence of these materials can aquatic life exist and that life itself, as it is not water, is itself pollution. It follows that pollution is always a relative term and for purposes of legislation and legal action a measure of the pollution must be established.

The Conservation Law of the State of New York prohibits the discharge into a stream of wastes if injurious to fish life inhabiting the stream or injurious to the propagation of fish in the stream. No amount of extraneous matter, which does not in fact injure fish, is pollution of the class prohibited by statute.

Pollution may actually kill fish at some stage of development; drive them away, suffocate. starve, prevent them from spawning or from migrating; it may be harmful to some species of fish and not to others and it may have all these effects in any degree of gravity. It may affect but a small area, or many miles in the length of a stream. Intensity of pollution, extent of the affected area and the habits of the fish normal to the stream must all be considered.

Polluting Materials. Polluting materials are conveniently divided into two classes: first, those which kill fish by direct poisoning — chemicals, gas wastes and the like; second, organic wastes which by decomposition absorb the dissolved oxygen — sewage, milk plant, canning factory and similar wastes. The first class has been considered elsewhere and certain standards with regard to them set forth. The second class is more particularly considered in these pages.

Fish themselves are not always the best indicators of the condition of a stream. Some fish are migratory, all are mobile and all have considerable ability to keep out of sight. Failure to catch fish does not prove that a condition of serious pollution exists. Absence, real or apparent, may be explained by over-fishing, invisibility, failure to take the hook, or the fish may have gone elsewhere on their own affairs and not on account of pollution. If fish placed in the polluted stream die at once, it may be presumed that the law has been violated; but ability of the fish to live, coupled with failure to find fish, requires further proof of adverse conditions. This proof may be afforded by a study of the natural stream conditon and of the smaller animal and vegetable aquatic life present. These small animals and plants either cannot move or cannot move far, so that they show the average stream condition better than do the more active fish.

Gill-breathing aquatic animals require oxygen to be dissolved in the water that they may live. This oxygen is not that which enters into the composition of the water itself to make the familiar chemical formula H_2O. It is gaseous oxygen, similar to that of the atmosphere, held in solution in the water. Dissolved oxygen is also necessary for the life of many aquatic plants. Much of this oxygen is absorbed directly from the atmosphere, especially in riffles and water falls — much of it is given off by green aquatic plants.

Knowledge of the way in which plants and animals breathe is required before the relation between organic pollution and the oxygen dissolved in the water clearly can be understood. Plants and animals are somewhat dependent on each other in this respect, as is shown by the well-known " balanced aquarium."

Green plants alone can live on strictly inorganic substances. They require for life: water, salts — like saltpeter, lime, etc.— carbon dioxide gas and sunlight. By virtue of the action of sunlight on the green coloring matter of the plant, the constituents of the carbon dioxide are separated, the carbon combined with water and other materials to make plant substance and the oxygen returned to the surrounding air or water. Thus all vegetable matter is deficient in oxygen, as is clearly shown by the fact that it will burn either rapidly as in a fire, or slowly as in the tissues of an animal.

Animals cannot utilize solar energy directly in their life processes and cannot live on inorganic material alone. Energy for aimal life is obtained by the oxidation of organic material, either plant substance or animal flesh which was primarily built up from plant substance. The ultimate requirements for animal life are water, oxygen and plant substance. The food material is burned and finally returned to the earth, air or stream as water mineral salts and carbon dioxide; materials which by solar energy can again be converted into plants.

Dead organic matter must be oxidized back into its original constituents before it can again serve as food for green plants. This action is finally brought about by the non-green plants — fungi, molds, etc.— and by the bacteria. The process requires oxygen and gives up carbon dioxide, water and minerals. Decomposition of organic waste matter in a stream absorbs the oxygen in the water and, until the process is completed, the water will contain less than the usual amount of oxygen. It takes time for decomposition processes to become active and only a definite quantity of oxygen can be absorbed by a given amount of waste, so the condition of serious pollution may be developed only at some distance below the point of entry of the waste and will continue only for a definite distance. A small volume of waste in a large stream will not exhaust the dissolved oxygen and there will be fairly quick return to normal conditions. If the proportion of waste to water is high, there may be complete exhaustion of the oxygen and slow recovery. In this last case certain bacteria break up some of the material present without oxidizing it, producing foul smelling gases and creating a nuisance. This condition is called "septic" and a septic stream can support no animal or plant life that requires dissolved oxygen for respiration. It can support bacteria and air-breathing aquatic animals, such as rat-tail maggots. All smelly streams, however, are not septic.

Plant Foods. Plant foods are produced by the breaking up of organic material. Plants are the starting point for all animal foods. It follows that in the long run the pollution of a stream with organic material may be beneficial to fish and other aquatic life. It amounts to fertilization of the stream and no life can exist in it unless such pollution is present in some measure. Nevertheless, this pollution must be kept within strict bounds or it will cause widespread destruction.

Water varies in its power to absorb gaseous oxygen according to its temperature, cold water having a much greater absorptive capacity than warm water, as shown by the following tabulation:

Temperature F.	Maximum oxygen which can be absorbed · parts per million.
32°	15
50°	11.5
70°	9
90°	7.5

Fish Requirements. Fish requirements for dissolved oxygen vary with the species of the fish and the age of the individual. It has been said by one authority that few fish are found when the oxygen saturation is below 50 per cent and none where it is below 30 per cent. These figures are perhaps high. for fish have been known to live where the dissolved oxygen was 1.5 parts per million, probably less than 20 per cent saturation. Conditions favorable for the growth of fungi would tend also to favor the various fungus diseases to which fish are subject. Fish eggs deposited in organic sludge or in the zone of fungus growth would be destroyed in a short time.

A stream polluted by organic wastes can be conveniently divided into three zones: zone of recent pollution, septic zone, and zone of recovery. Typical indicators of these three zones are, respectively: water fungi, rat-tail maggots, and bloodworms. There is no hard and fast line of demarcation between these zones and only a portion of the middle zone may be truly septic. The upper limit of the second and the lower limit of the other two corresponds approximately with 40 per cent saturation of oxygen, or about 3.5 parts per million at summer temperatures. If the volume of waste is great, all these zones will be found and the two last may extend over many miles. With a lesser volume of waste, the middle zone may not be found. A still smaller intensity of pollution may curtail or eliminate the last zone. Slight pollution may fail even to give the first, except perhaps over a small patch of stream bed. Fish can live in the first zone and not infrequently are found there. They can also live in the third zone. If the second zone is present, there is good reason to believe that fish are injuriously affected. Although they might be able to penetrate for a short distance into that zone, they probably would not stay there, and certainly fish spawn could not develop in any such location. A septic stretch of stream would seem to be an effectual bar to the migration of fish up and down the stream.

Zone of Recent Pollution. Where an organic waste enters a stream, it may at first merely cause turbidity. The organic material may still be fresh and it frequently is relished by fish, which, therefore, frequent the vicinity of the outfall. As decomposition processes become established, the typical water fungi appear. These form in dense masses, covering the stones of the bottom and clinging to submerged sticks and plants. In still water they may be in bulbous form, like summer clouds; where there is more current the masses are more shaggy or fleecy with jagged edges and points swaying in the current. Fragments are frequently detached by the current and carried downstream into the lower zones. While submerged, these plants have somewhat the appearance of cotton wool, although made up of gelatinous threads. The newly developed forms are frequently white, but the older parts tend towards an olive green or " putty " gray color, turning to a rusty brown in the oldest portions. These fungi feed on and distintegrate waste material and absorb oxygen. They persist until the oxygen saturation is pulled down to about 45 per cent, 4 parts per million at summer temperatures, when they die and in turn support the lower forms of fungo-bacteria. Near the lower limit of this zone, tubifex worms appear, working in the sludge, made up of wastes and decomposing fungi. Green plants are found in this zone, the larger and more highly organized forms in the upper portion giving place to smaller and lower forms, which finally become microscopic in size and visible only in masses. These last disappear as the lower limit is reached.

Septic Zone. Fungus life in its lowest forms is plentiful at first, somewhat similar in appearance to that of the first zone, but having a more distinctly thread-like structure and tending to cream, pink or gray coloration, which may become very dark. Tubifex worms disappear and are replaced by the larvae of the sewage fly and the rat-tail maggot. As the oxygen continues to be absorbed the water molds disappear, but may again recur if an intervening riffle reoxygenates the water. Pools may become really septic, with no oxygen, black deposits and evolution of foul-smelling gases. Rat-tail maggots are found all through this zone, except perhaps in the most septic parts. Green plants are absent, except where the microscopic forms start the work of regeneration at the lower end. Throughout this zone there is an accumulation of sludge, forming a pollution carpet, the condition of which as to oxygen is worse than that of the water. Fish may penetrate the upper and lower limits, but cannot live where conditions are the worst. At the end of this zone, where the work of decomposition and oxygen absorption is nearly completed, green plants start to appear and reoxygenate the water.

Zone of Recovery. Here there is usually an accumulation of sludge brought down from above, but it is usually brown rather than black. In this sludge the bloodworm, typical of this zone, flourishes. Tubifex may be found at the upper end. Green plants multiply and eventually the water becomes reoxygenated and the clean water forms re-established. Certain fish, such as the sucker, stone roller, creek chub and shiner, are found in this zone, growing fat on bloodworms and on the bottom sludge. Game fish probably penetrate it from below in pursuit of these smaller fish and also eat bloodworms which are washed down into the lower reaches. The lower limit of this zone is marked by the increase in green plants, such as brook silks, mosses, water nets and tolerant rooted plants, which are powerful oxydizers of the water.

Clean Water Forms. Plants growing in clean water are markedly green and frequently of more highly organized types than those in the polluted sections. Animal life tends to be more active and highly organized. Typical forms of plants and animals which will not inhabit the polluted waters are shown in the figures.

Tolerant Forms. Some species of plants and animals are of litle value as indicators of pollution because they are found in both clean and polluted waters. Snails, black fly larvae, water boatmen and similar forms have a wide range and therefore are not good guides to water condition, except to the scientist who can distinguish between the different species of these animals.

Summary. Indicators of pollution may be summed up thus:

Water molds and scums, particularly if of colors other than green, indicate decreasing oxygen — conditions are not favorable and may be worse downstream.

Tubifex marks approximately the limit of fish life.

Rat-tail maggots, if abundant over the whole bed of the stream, are an almost certain indication of prohibited pollution.

Bloodworms indicate recovery and conversion of wastes into fish food.

Green plants, mosses, silks and nets usually indicate good and improving conditions.

These biological indicators of the oxygen condition of a stream and of its availability for fish life, we feel, will be of material aid in determining the harm, if any, done by a given case of pollution. They are aids only. A solitary fragment of sewage fungus does not indicate wholesale destruction of fish life. An evil odor about a polluted stream may come from the factory and not from the wastes which it discharges into the stream. The finding of a few rat-tail maggots in an eddy does not indicate that the whole stream is septic and therefore a bar to fish migration. In the study of stream pollution, as in most other departments of life, an open mind and a little common sense are most valuable assets.

ESSENTIAL REQUIREMENTS OF FISH

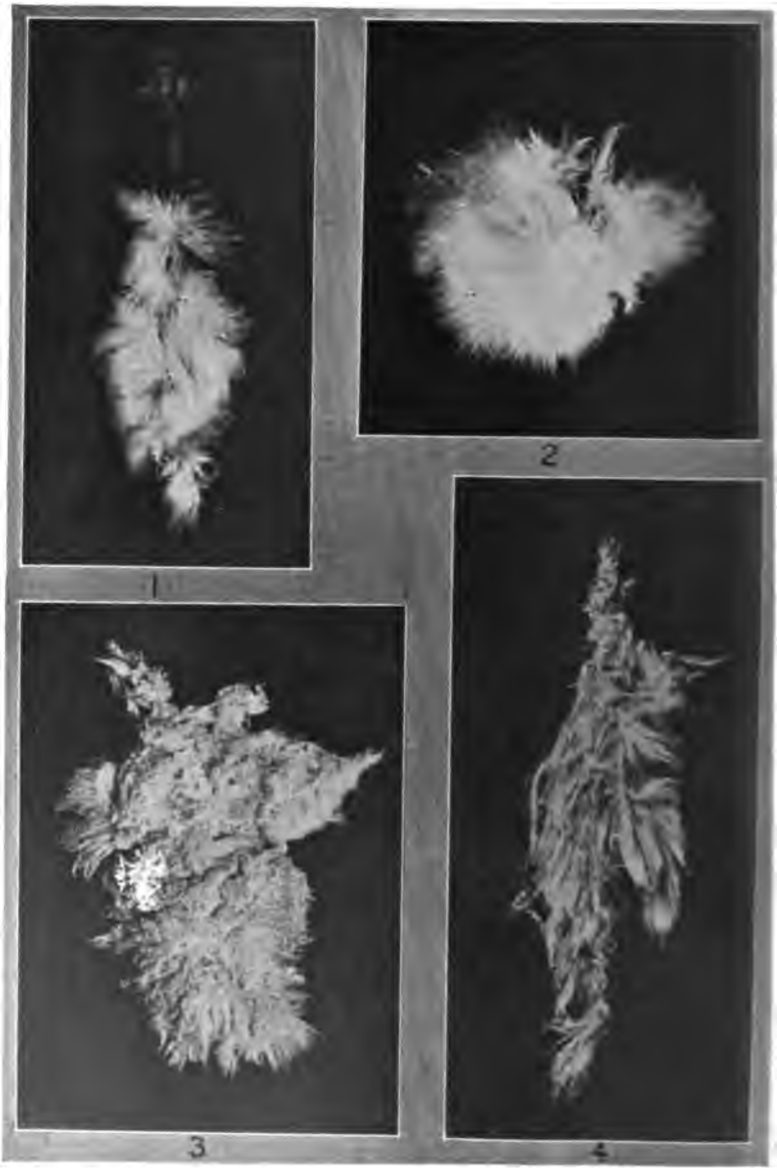
NAME	Oxygen	Food	Spawning
Brook trout	High	All floating animals	October to January in clean gravel in shallows. Migratory.
Landlocked salmon	High	All floating animals	October to January in clean gravel in shallows. Migratory.
Smallmouth bass	High	All floating animals	May to July on clean gravel.
Largemouth bass	Medium	All floating animals	May to July in clear places.
Yellow perch	High	All floating animals	March and April on water plants.
Sunfish or pumpkin seed	Medium	Animals afloat and on weeds and stones	Summer in hollows in shallows along shore
Bullhead	Medium	Animals afloat and on bottom, some plants.	May to July on clean sand and stones.
Minnows			
Stone roller	Low	Some sludge and life therein	Spring and summer, clean sand and gravel.
Shiner	Low	Some sludge and life therein	Spring and summer, clean sand and gravel.
Creek chub	Low	Some sludge and life therein	Spring and summer, clean sand and gravel.
Sucker	Low	Sludge and anything in it	April and May; eggs are scattered.

EXPLANATION OF PLATES

Oxygen saturations were determined at temperatures near 70° F.

For assistance in identifying troublesome species acknowledgments are due various staff members at the N. Y. State Museum, Philadelphia Academy of Sciences, Illinois Natural History Survey, Cornell University and N. Y. Botanical Garden.

PLATE I.



SEWAGE FUNGI.

1. Thiothrix.
2. Saprolegnia.
3. Leptomitus.
4. Sphaerotilus.

PLATE I.

SEWAGE FUNGI (WATER MOLDS)

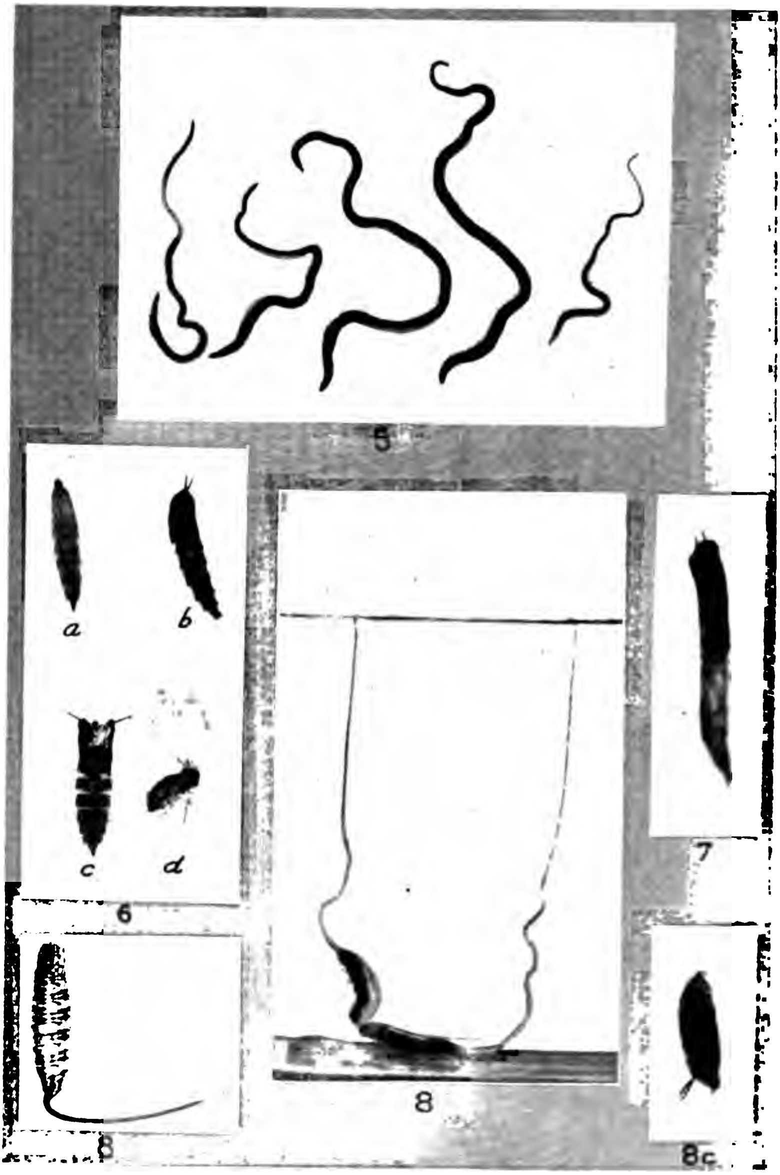
Figure 1. ***Thiothrix* sp.** A fungo-bacterium, common in streams highly polluted by milk condensery wastes; cream colored or pinkish, composed of minute filaments or threads held together by gelatinous sheaths: found chiefly in the slightly oxygenated riffles between septic pools. Oxygen requirements 50 to 30% saturation. About half natural size.

Figure 2. ***Saprolegnia* sp.** A water mold developing from whey wastes. A whitish cottony growth often grey, composed of coarser filaments and possessing a highly glazed appearance, covering all surfaces with a thick cottony felt. Oxygen requirements 60 to 50%. About half natural size.

Figure 3. ***Leptomitus lacteus,*** Agardh. A greyish mold resembling fine merino wool, but composed of finer threads; common among growths resulting from the discharge of sewage and wastes from milk plants. Oxygen requirements 70 to 45%. About half natural size.

Figure 4. ***Sphaerotilus natans,*** Kutz. Common at sewer outfalls; color varies from nearly pure white to gray, with yellowish or reddish tinge; clings to stones, sticks, algae, etc. Oxygen requirements from 70 to 50% saturation. About natural size.

PLATE II.



ANIMALS OF THE SEPTIC ZONE.

5. Sludge worms.
6. Sewage-fly at various stages.
7. Sewage crane-fly.
8a. **Rat-tail maggot — feeding position.**
8b. **Rat-tail maggot — larva.**
8c. **Rat-tail maggot — pupa.**

PLATE II.

ANIMALS OF THE SEPTIC ZONE.

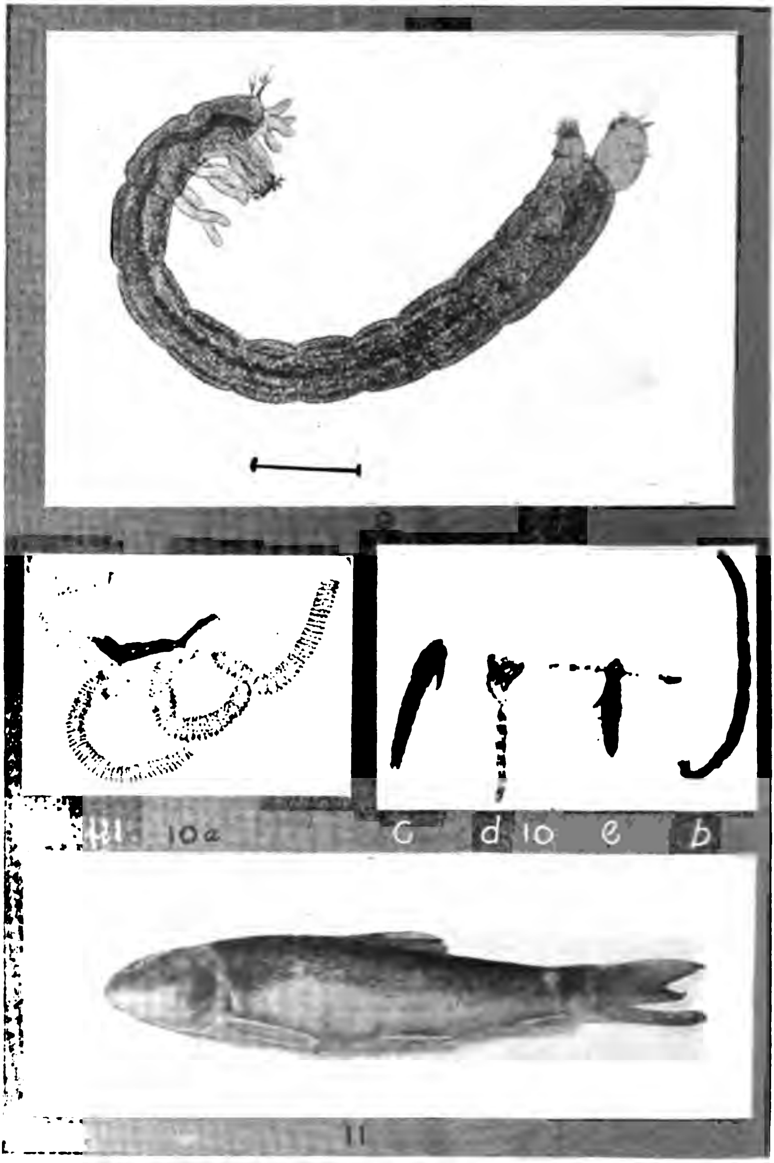
Figure 5. Sludge worms or slime worms (*Tubifex tubifex*). A relative of the earth worm; recognized by red color and spiral motion. This motion of the worm or a group of them waving back and forth in unison adapts them to a life in the water with a minimum supply of oxygen. Usually found associated in large numbers in the depressions of ooze or soft mud along the edges of septic pools, or at the bottom in the transition zone. Oxygen requirements 70 to 15%. Magnified about three times.

Figure 6. Sewage-fly. (*Psychoda alternata*, Say). A small fly breeding in putrid masses or clinging to sewage fungi floating in the current. (a) larva; (b) pupa; (c) empty pupa case; (d) adult, a gray, hairy moth-like fly of slow movements, often seen hovering under projecting structures near the stream. Magnified about four times.

Figure 7. Sewage crane-fly (*Erioptera sp.*) Pupa. Found in about the same situation as the sewage fly. Magnified about three times.

Figure 8. Rat-tail maggot (*Eristalis tenax*, Linn). (a) Maggot in natural position securing air through extended tail. Natural size; (b) Larva. Extensible air-tube, the " rat-tail," permits it to secure air from the surface when immersed in a nearly oxygen free substratum. Larva is whitish and slightly transparent. It frequently may be observed floating on the surface of disturbed pools, or among putrid debris lodged about stones. Normally the body is buried in mud with tail extending through surface film to the air. Figure shows tail telescoped. Adult fly is bee-like and may be seen about the most septic places depositing eggs in mud near edge of water. Slightly magnified; (c) Pupa. Found in mud alongside pools. Body dark and smooth; " tail " usually dissolved. Oxygen requirements 40 to 0%. Slightly magnified.

PLATE III.



ANIMALS OF THE ZONE OF RECOVERY.

9. Bloodworm — larva.
10a. Bloodworm — eggs.
10b-e. Bloodworm — life stages.
11. Sucker — fingerling.

PLATE III

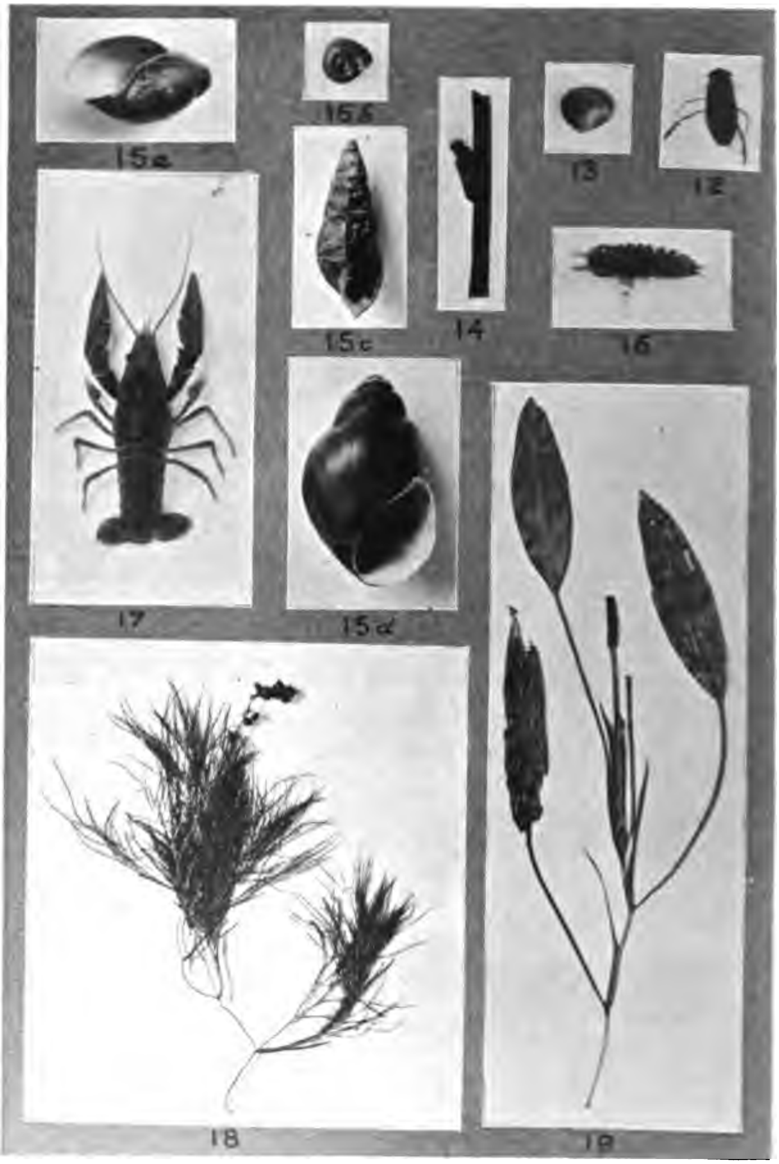
ANIMALS OF THE ZONE OF RECOVERY

Figure 9. Bloodworm (*Chironomus decorus*, Johann). Larva. Highly magnified. Copy from Vol. X, Mass. Inst. Tech. 1917.

Figure 10. Bloodworm. (a) Eggs. Brownish gelatinous masses, generally attached to objects in the riffles; (b) Larva. Blood-red in color, occupies a tube formed in the sludge; (c) Pupa; (d) Empty pupa case; (e) Adult midge. Usually seen hovering about the riffles, depositing eggs in the water just beneath the surface. Adult form is about the size and general appearance of a mosquito. Larvae live in tubes of their own construction, formed of sludge substance glued together by the animal. Tubes are frequently heaped upon each other. There is an opening at the top, a round chimney hole, about the size of a steel knitting needle. Oxygen requirements 70 to 50%. Magnified about two times.

Figure 11. Common sucker (*Catostomus commersonii*, Lace). A sludge feeder which frequents the bloodworm zone. A fingerling of the second season. About three-fourths natural size.

PLATE IV.



TOLERANT FORMS.

12. Water boatman.
13. Pea clam.
14. Black fly.
15. Snails.
16. Sow bug.
17. Crayfish.
18. Sago pondweed.
19. Swift water pondweed.

PLATE IV.

TOLERANT FORMS.

Figure 12. Water boatman (*Arctocorixa*). A bug which carries its air supply in a bubble behind and may penetrate contaminated regions. Slightly magnified.

Figure 13. Pea clam (*Pisidium abditum,* Hald). A mollusk which attaches itself to plants carrying sludge accumulations. Thrives in waters polluted by domestic sewage. Slightly magnified.

Figure 14. Black fly (*Simulium venustum,* Say) Pupa. Attached to a leaf. Found where the current is swift. Slightly magnified.

Figure 15. Snails: (a) *Physa heterostropha,* Say. An air breather. May be found in septic regions. Secures air by crawling upside down on water surface. Slightly magnified. (b) *Planorbis parvus,* Say. An air breather, tolerant of conditions near sewer outfalls. Slightly magnified. (c) *Goniobasis virginica,* GM. A water breather. Natural size. (d) *Campeloma decisum,* Say. About natural size.

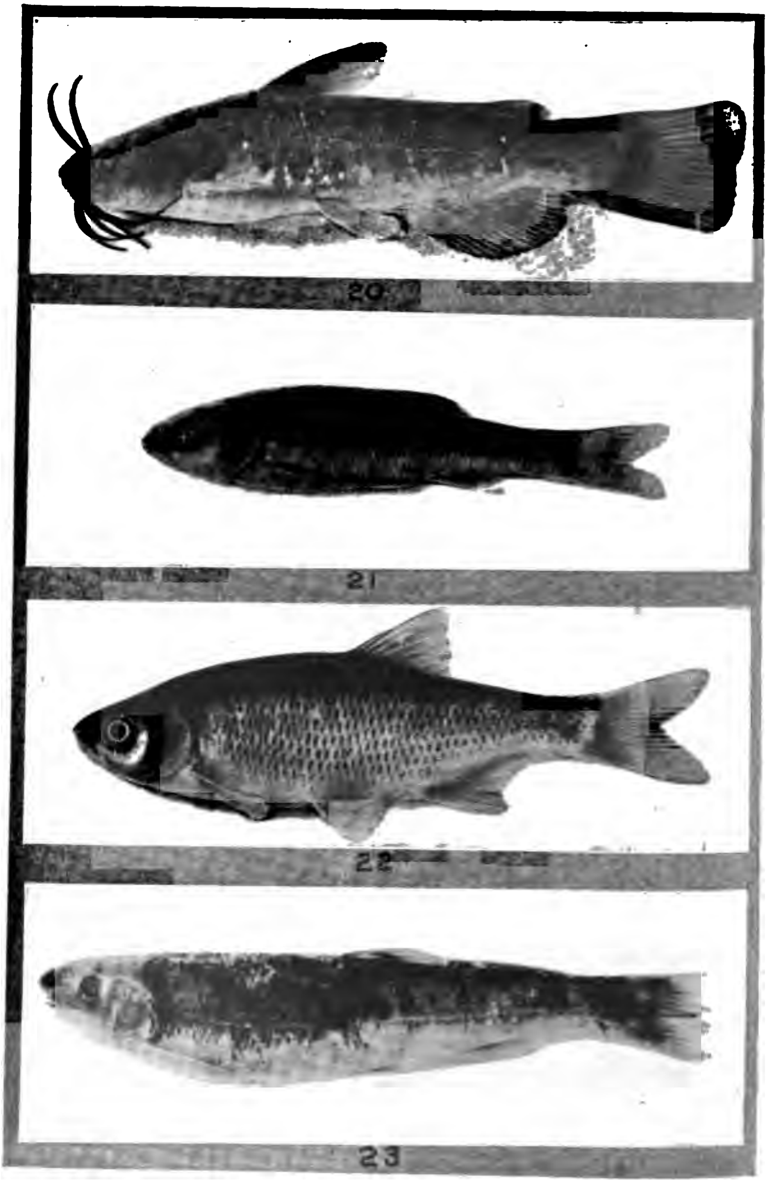
Figure 16. Sow bug (*Asellus communis,* Say). A scavenger; frequents muddy places. Slightly magnified.

Figure 17. Crayfish (*Cambarus immunis,* Hagen). A scavenger which has been found in large numbers in waters recovering from sewage pollution. About one-fourth natural size.

Figure 18. Sago pondweed (*Potamogeton pectinatus,* L). Common where there is running water and a muddy bottom. About one-fourth natural size, but variable.

Figure 19. Swift water pondweed (*Potamogeton americanus,* C & S). About one-fourth natural size.

PLATE V.



TOLERANT FISHES — FINGERLINGS.

20. Bullhead. 22. Golden shiner.
21. Creek chub. 23. Stone roller.

PLATE V.

TOLERANT FISHES.

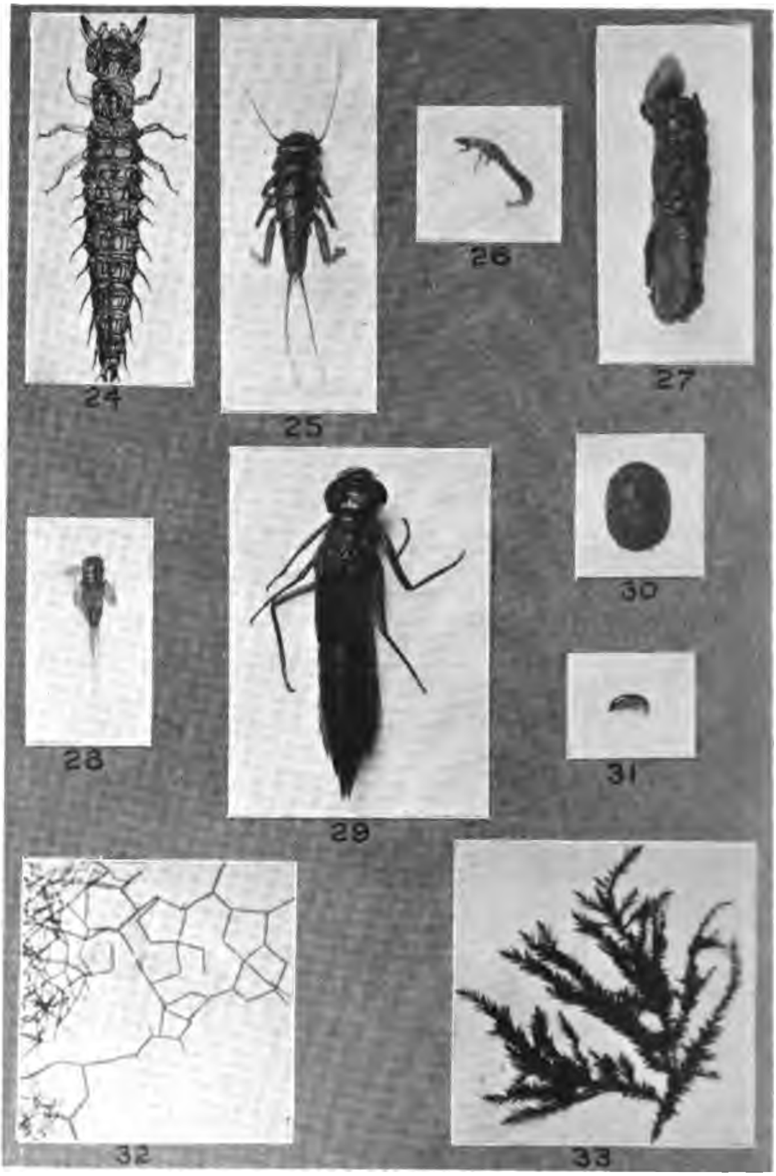
Figure 20. Bullhead or horned pout (*Ameiurus nebulosus*, Les). Fingerling about three and one-half months old. Natural size.

Figure 21. Horned dace or creek club (*Semotilus atromaculatus*, Mitch). A fingerling of the first season. Natural size.

Figure 22. Golden shiner (*Abramis crysoleucas*, Mitch). A fingerling of the second season. About three-fourths natural size.

Figure 23. Stone roller (*Campostoma anomalum*, Ref). A fingerling of the second season.

PLATE VI..



CLEAN WATER FORMS.

24. Dobson.
25. Stonefly.
26. Caddisworm.
27. Caddisworm case.
28. Mayfly.
29. Dragonfly.
30. Water penny.
31. Scud.
32. Water net.
33. Water moss.

PLATE VI.

CLEAN WATER FORMS.

Figure 24. Dobson or "Helgramite" (*Corydalis cornuta,* Linn). Larva. Three to nine inches long. Under or around stones in swift water. Copy from N. Y. Museum Bulletin, No. 47.

Figure 25. Stonefly (*Perla sp.*) Nymph. Under and around stones in swift water; very flat body with two tails. Slightly magnified.

Figure 26. Caddisworn (*Hydropsyche sp.*) Larva of the caddisfly. Several species with various habits and forms; in swift waters mostly. Under stones in loosely constructed pebble and webbing cases; attached to stones on the lee side of the current in compact stone cases; or in a funnel-like strainer of webbing with a retreat. About natural size.

Figure 27. Caddisworm case of compact structure. About natural size.

Figure 28. Mayfly (*Heptogenia sp.*) Nymph. Under stones in swift water. Very flat body, smaller usually than the stonefly; three tails. Slightly magnified.

Figure 29. Dragonfly (*Anax junius,* Dru) Nymph. Extensible "lower jaw." Darts forward by expelling water from behind. Found in dense growths of green aquatic plants in still water. About natural size. Damselfly nymphs are similar, but have three long feather-like tails.

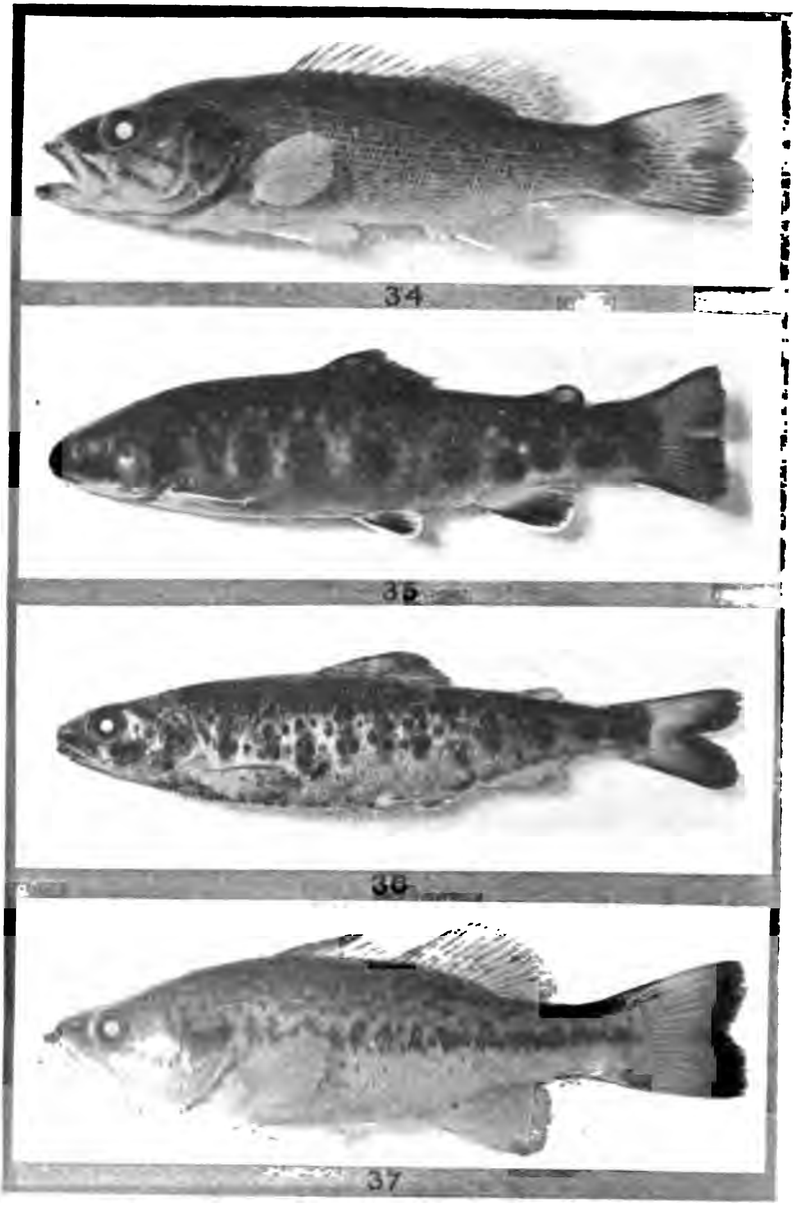
Figure 30. Water penny (*Psephenus lecontii,* Lec). Larva of a beetle. Common in swift water, clinging closely to under side of stones, occasionally at top or sides. Slightly magnified.

Figure 31. Fresh water shrimp or "scud" (*Hyalella sp.*). Weedy portions of the stream. Rapid swimmers, back foremost. Slightly magnified.

Figure 32. Water net (*Hydrodictyon reticulatum* (L) Lagerh). A green alga of the pond areas of streams. When spread, it resembles a fine meshed veil. A remarkable oxygenator. Sightly magnified.

Figure 33. Water moss (*Hypnum riparium*). Attached to stones or gravel in swift streams. About natural size.

PLATE VII.



CLEAN WATER FISHES — FINGERLINGS.

34. Smallmouth bass.
35. Brook trout.
36. Landlocked salmon.
37. Largemouth bass.

PLATE VII.

CLEAN WATER FISHES (FINGERLINGS).*

Figure 34. Smallmouth bass (*Micropterus dolomieu,* Lace). About three months old. Natural size.

Figure 35. Brook trout (*Salvelinus fontinalis,* Mitch). About seven months old. Slightly under natural size.

Figure 36. Landlocked salmon (*Salmo salar sebago,* Gir). About five months old. Natural size.

Figure 37. Largemouth bass (*Micropterus salmoides,* Lace). About three months old. Natural size.

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* The usual photographs of fish picture the adult forms. Illustrations of fingerlings are given to make clear the difference between minnows and the young of other fish.

LIMITS OF TOLERANCE OF FISH TO TRADE WASTES

Dilution is the most important factor in questions of stream pollution. To judge of the probable effects of the discharge of trade wastes into a stream or to determine the basis of design for treatment works, it is essential first to ascertain the maximum amount of the given waste which can be discharged into the particular stream without resultant injury to fish; that is the limit of tolerance of fish to that waste, or the minimum dilution of the waste which will obviate injury to fish.

Sufficient dilution with clean water will render innocuous the most virulent poison. This is illustrated by the fact that all natural waters contain in solution certain salts and other chemicals, which give the water the qualities known as hardness and alkalinity. Normally these minerals are in amounts not only harmless, but perhaps essential to vigorous fish life; but any of them would be injurious to fish if in sufficiently strong concentrations.

Tables follow giving such information on this subject as could be discovered by an extensive search of available literature. These dilutions generally approximate to the limits of tolerance of fish and may be considered as tentative standards of allowable pollution of streams by these particular wastes.

It must be clearly recognized that these results are by no means exact and they must be used as rough approximations only. Fish of different species and the same fish at various stages of development differ as to susceptibility. Consideration must also be given to the effect of the waste on fish food and fish habits. Wastes may drive fish from a stream even though they would not kill them. Chemical constituents of the water of the stream or of other wastes entering the stream may greatly modify conditions. From various causes, the virulence of any poisonous waste will decrease with time and progress down the stream. Final results should always be subjected to an actual test on local fish of various ages.

Poison of any type can kill only a limited number of fish, as by the act of killing the poison is changed to something else, usually innocuous. Poisons differ in deadliness according as they attract or repel fish. Wastes which attract fish — such as some gas wastes — cannot be allowed anywhere in the stream to reach deadly concentrations; whereas types which are avoided by fish can be allowed in high concentrations in limited areas if they do not form an obstruction by which the fish cannot pass.

It is interesting to make a rough classification of such wastes in the order of toxicity as follows:

No dilution required — sawdust and treated sewage.
Dilution less than 1:10 — raw sewage, fibre factory wastes.
Dilution from 1:10 to 1:100 — spent dyes, paper mill wastes.
Dilution from 1:100 to 1:1000 — gas manufacture wastes, wastes from bleacheries.
Dilution from 1:1000 to 1:10,000 — caustic lime, bichloride of mercury and chemicals generally.
Dilution 1:10,000 to 1:100,000 — lime, strong acids, gas tar.
Dilutions greater than 1:1,000,000 — copper sulphate, bleaching powder.

One important class of wastes is not covered by the above classification. This comprises the organic wastes which, after passage into the stream, undergo putrefaction, such as sewage, wastes from canning factories and milk plants. Most of these wastes are not in themselves toxic to the fish, or but slightly so. Deadly effects are produced by putrefaction with resulting partial or complete absorption of the oxygen dissolved in the water and resulting suffocation of the fish. There is another phase to this particular type of pollution: the net results of it may be beneficial to fish life. Such pollution amounts to the fertilization of the stream, and, although all the fish may be killed in certain portions eventually these organic matters furnish material for fish food in other places. This has been brought out by Dibdin, who has advanced the theory that the North Sea fisheries are in some measure dependent on the sewage of London; by Whipple, in discussing the effect of the sewage of Rochester, N. Y., on the Genesee River, and it is probable that the sewage of the City of New York and adjacent communities is responsible for the fact that oysters grow with such rapidity and to such size in Raritan Bay.

This compilation was first made in 1917; it has been revised since and is thought to include most of the important available data on this subject. It does not include many of the determinations of Shelford on rare and unusual chemical compounds and the question as to whether a waste attracts or repels fish. Attention is called to a somewhat similar compilation entitled "Stream Pollution — Effect of Various Wastes on Fish Life" published by the U. S. Bureau of Fisheries, April, 1919.

Limits of Tolerance

Limiting dilutions alone are tabulated

K — killed	m — minutes
A — affected seriously	h — hours
O — no effect	d — days

p. p. m.— parts per million dilution

SUBSTANCE	Effect	Dilution	Time	Species	Authority
Sewage and sewage effluents:					
Sewage, aerated	K	Undiluted			Clark & Adams
Sewage, aerated	O	1:1			Clark & Adams
Sewage, raw	O	1:9			Clark & Adams
Effluent from:					
Chemical precipitation plant	K	Undiluted			Rideal
Filter, bacterial	O	Undiluted			Dibdin
Filter, contact	O	1:1			Clark & Adams
Filter, contact	O	Undiluted			Clark & Adams
Filter, sand (acid)	K	Undiluted			Clark & Adams
Filter, sand (alkaline suspended matter)	K	Undiluted			Clark & Adams
Filter, sand	O	Undiluted			Dibdin
Filter, sprinkling	O	Undiluted			Rideal
Filter, sprinkling	O	1:3			Clark & Adams
Chemicals:					
Acetic acid	O	1:3500		Gold fish	Rafter & Baker
Acetic acid	K	1:8750	20 h	Minnows	Rafter & Baker
Aluminum compounds:					
Alum	K	1:400,000		Minnows and gold fish	Rafter & Baker
Alum	O	1.5 grs. per gal.			Clark & Adams
Sulphate	K	1:10,000			Penny & Adams
Ammonia compounds:					
Ammonium carbonate	K	5.5 to 7.0 p. p. m.			Clark & Adams
Ammonium chloride	O	180 p. p. m.			Clark & Adams
Ammonium hydrate	K	10 p. p. m.			Clark & Adams
Ammonium hydrate	K	50 p. p. m.	47 m	Trout	Mason
Arsenious acid	K	1:35,000			Penny & Adams
Bromine	K	1:35,000		Gold fish and minnows	Rafter & Baker
Carbolic acid	K	1:3,000		Gold fish	Rafter & Baker
Carbolic acid	A	5 p. p. m.	15 m	Trout	Mason
Carbolic acid	O	1:7,000		Gold fish	Rafter & Baker
Carbolic acid	K	1:70,000		Minnows	Rafter & Baker
Carbolic acid	K	1:3,000		Trout	Rafter & Baker
Chlorine, sat. sol.	O	1:2,000		Minnows and gold fish	Rafter & Baker
Bleaching powder	K	0.0005%		Tench	Waring
See Lime, chloride	K	0.0008%		Trout	Waring
Copper compounds:					
Sulphate	K	1:7,000,000		Trout	Moore & Kellerman
Sulphate	K	1:100,000		Minnows and gold fish	Rafter & Baker
Sulphate	O	1:200,000		Minnows and gold fish	Rafter & Baker
Sulphate	K	1.28 p. p. m.			Clark & Adams
Sulphate	O	1 p. p. m.			Clark & Adams
Sulphate	O	5 p. p. m.			Rafter & Baker
Sulphate	O	2.1 p. p. m.		Black bass	Kellerman
Sulphate	O	0.3 p. p. m.		Carp	Kellerman
Sulphate	O	0.4 p. p. m.		Catfish	Kellerman
Sulphate	O	0.5 p. p. m.		Gold fish	Kellerman
Sulphate	O	0.75 p. p. m.		Perch	Kellerman
Sulphate	O	0.4 p. p. m.		Pickerel	Kellerman

Limits of Tolerance — *Continued*

Substance	Effect	Dilution	Time	Species	Authority
Copper compounds:					
Sulphate	O	0.3 p. p. m.		Suckers	Kellerman
Sulphate	O	1.2 p. p. m.		Sunfish	Kellerman
Sulphate	O	0.14 p. p. m.		Trout	Kellerman
Hydrochloric acid	O	1:50,000		Minnows and gold fish	Rafter & Baker
Hydrochloric acid	K	5 p. p. m.			Clark & Adams
Hydrochloric acid	A	100 p. p. m.	4 m.	Trout	Mason
Iodine	K	1:35,000		Minnows and gold fish	Rafter & Baker
Iron compounds:					
Chloride (Fe_2Cl_6)	A	1,000 p. p. m.	3 m.	Trout	Mason
Oxide	O	1:10,000	9 d.	Perch	Marsh
Salts	K	1:4,000		Minnows and gold fish	Rafter & Baker
Sulphate	K	0.1 p. p. m.			Clark & Adams
Sulphate ($Fe\,SO_4.7H_2O$)	O	50 p. p. m.	15 h.	Trout	Mason
Lead acetate	K	1:4,000		Minnows and gold fish	Rafter & Baker
Lime compounds:					
Chloride ($CaCl_2O$)	K	0.5 p. p. m.	3 h.	Trout	Mason
Chloride ($CaCl_2$)	A	1,000 p. p. m.	2 h.	Trout	Mason
Chloride (sat. sol.)	K	1:16,000		Minnows	Rafter & Baker
Hydrate	K	70 p. p. m.	26 m.	Trout	Mason
Hydrate (sat. sol.)	O	1:21,000		Minnows and gold fish	Rafter & Baker
Oxide (hydrate)	K	18 p. p. m.		Trout fry	Marsh
Manganese chloride ($MnCl_2$)	A	1,000 p. p. m.	1 m.	Trout	Mason
Mercuric chloride	K	0.1 to 0.05%		Tench	Saare & Schwab
Mercuric chloride	K	0.1 to 0.05%		Trout	Saare & Schwab
Mercuric chloride	K	50 p. p. m.	54 m.	Trout	Mason
Nitric acid	O	7 p. p. m.		Gold fish	Clark & Adams
Nitric acid	K	1:50,000		Minnows	Rafter & Baker
Potassium compounds:					
Bicarbonate	O	1:500		Minnows and gold fish	Rafter & Baker
Caustic	K	1:7,000		Gold fish	Rafter & Baker
Caustic	O	1:35,000		Gold fish	Rafter & Baker
Caustic	K	1:35,000		Minnows	Rafter & Baker
Cyanide	K	0.01 to 0.005%		Trout	Saare & Schwab
Nitrate	O	50 p. p. m.			Clark & Adams
Prussiate, red	O	1:500		Minnows and gold fish	Rafter & Baker
Prussiate, yellow	O	1:500		Minnows and gold fish	Rafter & Baker
Sodium compounds:					
Bicarbonate	O	500 p. p. m.			Clark & Adams
Carbonate	K	1:17,500		Minnows	Rafter & Baker
Carbonate	A	1,000 p. p. m.	3 m.	Trout	Mason
Carbonate	O	1:35,000		Minnows	Rafter & Baker
Carbonate	K	250–300 p. p. m.			Clark & Adams
Hydrate	K	70 p. p. m.			Clark & Adams
Hydrate	O	56 p. p. m.	24 h.		Clark & Adams
Sulphuric acid	K	1:50,000		Minnows	Rafter & Baker
Sulphuric acid	O	1:50,000		Gold fish	Rafter & Baker
Sulphuric acid	K	100 p. p. m.	Immed'y.	Trout	Mason
Trade wastes:					
Ammoniacal works, effluent	K	0.25%	5 d.	Shad fry	McDonald
Ashes	K	1:140	5.5 h.	Gold fish	Rafter & Baker
Ashes	K	1:140		Minnows	Rafter & Baker
Bleaching solution	K	0.04%		Tench	Saare & Schwab
Bleaching solution	K	0.0008%		Trout	Saare & Schwab
Cinders, furnace	K	1:140			Penny & Adams
Coke, foundry	K	1:140			Penny & Adams
Dyestuffs & wastes:					
Gallic acid	K	1:7,000		Minnows and gold fish	Rafter & Baker
Gallic acid	O	1:14,000		Minnows and gold fish	Rafter & Baker
Galls	K	1:936		Gold fish	Rafter & Baker
Galls	K	1:2,808		Minnows	Rafter & Baker

LIMITS OF TOLERANCE — *Continued*

SUBSTANCE	Effect	Dilution	Time	Species	Authority
Knitting mill wastes:					
Spent chrome liquor	O	1:40	45 h	Bass	Marsh
Spent chrome liquor	O	1:50	4 d	Perch	Marsh
Spent chrome liquor aerated	K	1:70	48 h	Bass	Marsh
Spent chrome liquor aerated	O	1:60	14 d	Perch	Marsh
Spent dye liquor	K	1:10	8 d	Bass	Marsh
Spent dye liquor	O	1:8.5	8 d	Perch	Marsh
Logwood, boiled chips	O	1:2,800		Minnows and gold fish	Rafter & Baker
Logwood, extract	O	1:8,750		Minnows and gold fish	Rafter & Baker
Madder, solution	K	1:7,000		Minnows and gold fish	Rafter & Baker
Sumac solution	O	1:7,000		Gold fish	Rafter & Baker
Sumac solution	K	1:7,000		Minnows	Rafter & Baker
Fibre factory wastes	O	10%		Smelt	Prince
Gas wastes:					
Water gas wastes:					
Filter effluent	O	1:30	32 d	Perch	Marsh
Tar from wells, top	K	1:100,000	5 d	Perch	Marsh
Tar from wells, sediment	O	1:80	34 d	Perch	Marsh
Tarry liquor	O	1:500,000		Perch and bass	Marsh
Coal gas wastes:					
Tar from wells	O	1:200,000	34 d	Perch	Marsh
Ammoniacal liquor	O	1:3,000	24 d	Perch	Marsh
Effluent from ammonia sludge bed	O	1:100	34 d	Perch	Marsh
Wastes from both processes:					
Lime from purifiers	O	1:20,000	41 d	Bass	Marsh
Calcium oxide	K	18 p. p. m.		Trout fry	Marsh
Iron oxide	O	1:10,000	9 d	Perch	Marsh
Waste water from gas works	O	0.5%	12 h	White perch	Knight
Waste water from gas works	O	0.5%		Stickleback	Knight
Waste water from gas works	K	0.5%	10–15 m.	Trout	Knight
Waste water from gas works	K	0.5%	15 m.	Smelt	Knight
Waste water from gas works	O	0.5%	Several d.	Rock bass, sunfish, salt water chub	Knight
Waste water from gas works	K	0.5%	15m	Tom cod	Knight
Iron works wastes:					
Wastes from nail works	O	1/7%	Several d.	Stickleback	Knight
90,000 p. p. m. iron-chlorine salts 4,740 p. p. m., HCl	K	0.1%	10–30 m.	Smelt and trout	Knight
Linseed oil	Entirely innocuous			Minnows and gold fish	Rafter & Baker
Naphtha	O	1:8,750		Minnows	Rafter & Baker
Oil-heavy pitch	K	1:35,000		Minnows	Rafter & Baker
Oil-heavy pitch	K	1:35,000		Gold fish	Rafter & Baker
Oil-heavy pitch	O	1:70,000		Gold fish	Rafter & Baker
Paper and pulp mill wastes:					
Spruce fibre	O	1:28	10 d	Black bass	Marsh
Spruce strips and bark, aerated	O	5:2,800	7 d	Black bass	Marsh
Spruce bark, aerated	O	5:2,800	3 d	Black bass	Marsh
Poplar chips, aerated	A	5:280	4 d	Mummichog	Marsh
Poplar chips, aerated	K	1:280	4 d	Quinnat salmon fry	Marsh
Sulphite liquor	K	1:100	17 d	Bass	Marsh
Sulphite liquor, aerated	O	1:50	27 d	Perch and bass	Marsh
Sulphite liquor	K	1:75	113 h	Trout fry	Marsh
Sulphite liquor	O	1:200		Perch and bass	Marsh
Bleach sludge	O	1:500	14 d	Perch	Marsh
Bleach sludge, aerated	O	1:400	5 d	Perch	Marsh
Sulphite waste	O	10%		Stickleback	Knight

LIMITS OF TOLERANCE — *Concluded*

SUBSTANCE	Effect	Dilution	Time	Species	Authority
Paper and pulp mill wastes:					
Sulphite waste	K	25%	16 h	Stickleback	Knight
Sulphite waste	K	10%	22 h	Trout	Knight
Sulphite waste	K	10%	36 h	White perch	Knight
Sulphite waste	K	10%	24 h	Rock bass, etc.	Knight
Retting water, flax, hemp	K	1:9		Whiting	McDonald
Retting water, flax, hemp	K	1:9		Bastard carp	McDonald
Sawdust	O	Gruel like mix.	14 d	Trout	Knight
Soap, filtered	O	1,000 p. p. m.		Salmon	Mason
Soap, unfiltered	K	1,000 p. p. m.	1½ h	Salmon	Mason
Soap, crude, solution	O	1:8,750		Gold fish	Rafter & Baker
Soap, crude, solution	K	1:4,375	6 h	Gold fish	Rafter & Baker
Tannery wastes:					
Sour bark liquor	O	1:50	65 h	Bass	Marsh
Sour bark liquor, aerated	O	1:30	47 h	Bass and shiners	Marsh
Rocker sour bark liquor	O	1:60	9 d	Bass	Marsh
Rocker sour bark liquor	O	1:140	4 d	Perch	Marsh
Rocker sour bark liquor, aerated	O	1:30	6 d	Bass	Marsh
Rocker sour bark liquor	K	1:40	17 h	Perch	Marsh
Dye house liquor	K	1:10	11 d	Bass	Marsh
Dye house liquor	O	1:10	12 d	Perch	Marsh
Bate (contains caustic lime)	O	1:10	4 d	Bass	Marsh
Soak liquor (from hides)	O	Undiluted	4 d	Bass	Marsh
Sour liquor tail handler	K	1:60	29 h	Bass	Marsh
Sour liquor tail handler	O	1:60	5 d	Perch	Marsh
Sour liquor tail handler	O	1:50	5 d	Perch and bass	Marsh
Lime liquor (caustic)	O	1:50	30 d	Perch	Marsh
Liquid from hair washer	O	1:50	13 d	Perch	Marsh
Lime and sodium sulphide:					
Alkaline, 4,000 p. p. m.	O	1:150	43 d	Bass	Marsh
Alkaline	O	1:200	44 d	Perch	Marsh
Alkaline, aerated	O	1:150	8 d	Perch	Marsh
Tannic acid	K	1:7,000		Gold fish	Rafter & Baker
Tannic acid	K	1:14,000		Minnows	Rafter & Baker
Tar, coal	K	1:8,750		Gold fish	Rafter & Baker
Gases in Solution					
Ammonia:					
Hydrate	K	10 p. p. m.		Shiners, carp, suckers	Clark & Adams
NH_3	K	0.0025%	1 h	Trout	Weigelt
NH_3	O	0.001%		Trout	Weigelt
NH_3	A	10 c. c. per l		Sunfish	Shelford
Carbon dioxide	K	280 mg. per l			Kupzis
Carbon dioxide	A	30 c. c. per l		Trout	Reuss
Carbon dioxide	A	0.01%		Trout	Weigelt
Carbon monoxide	K	16 c. c. per l		Sunfish	Shelford
Hydrogen sulphide	K	3.5 c. c. per l		Sunfish	Shelford
Hydrogen sulphide	A	0.0001%	15 m	Trout	Weigelt
Hydrogen sulphide	K	1-2 c. c. per l			Shelford
Methane		Not toxic			Shelford
Oxygen Demands					
Oxygen		0.91 c. c. per l		Minimum	Kupzis
Oxygen		1.00 c. c. per l		Minimum	Marsh
Oxygen		50% saturation		Few fish	Dibdin
Oxygen		30% saturation		No fish	Dibdin
Oxygen		1.5 p. p. m		Fish live	Clark & Adams

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STUDIES ON OYSTER CULTURE

Oyster Fishery is Failing. Oyster culture, the most valuable fishery in the State of New York, is rapidly declining and threatens to become extinct. Over a million bushels of oysters, valued at more than a million dollars, were annually harvested in this State a few years ago. To-day this crop has shrunk to one-half its former magnitude and is decreasing each year. Lack of seed oysters has caused this condition and, unless a plentiful and cheap supply of seed becomes available, this decline will continue until the production of our grounds is limited to the small output of our natural oyster beds. The Commission believes that by artificial propagation and improved methods of spat collection this industry can be restored to more than its former figure, thereby increasing the resources of the people of the State and making a direct financial return to the State treasury.

TABLE I.

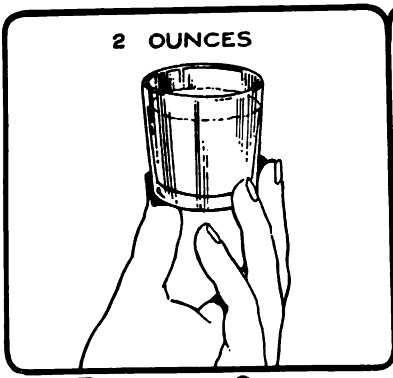
DECLINE IN ACREAGE OF STATE LEASED SHELLFISH GROUNDS.

(*Average revenue, $1.00 per acre.*)

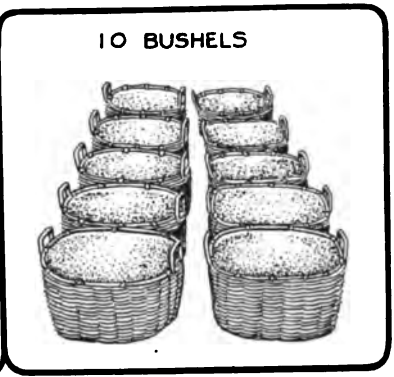
Year	Acres leased by State	Year	Acres leased by State
1915	33,956	1919	24,076
1916	29,611	1920	22,464
1917	27,118	1921	21,084
1918	25,847		

Growth and Decline of Industry. The oyster industry of New York State originally started on the limited areas in which oysters were found by the first settlers. Cultural methods of handling these shellfish were introduced at an early period. It was found that, if oysters were removed from the natural beds and placed in other waters, they grew more rapidly and improved in quality. Eventually this industry became highly developed, due to the discovery that different areas were best suited to the growth of oysters at

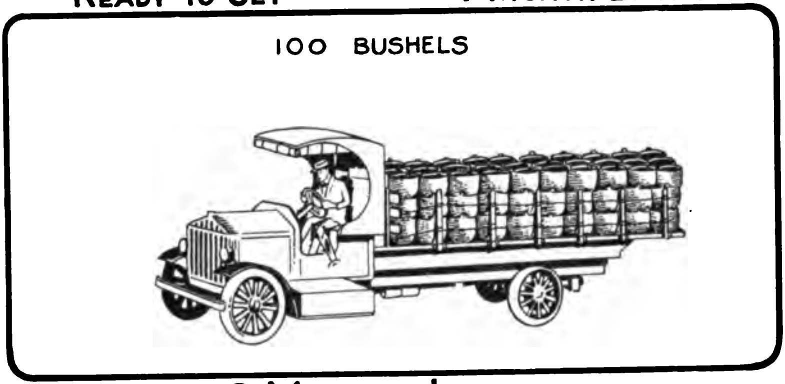
A MILLION OYSTERS



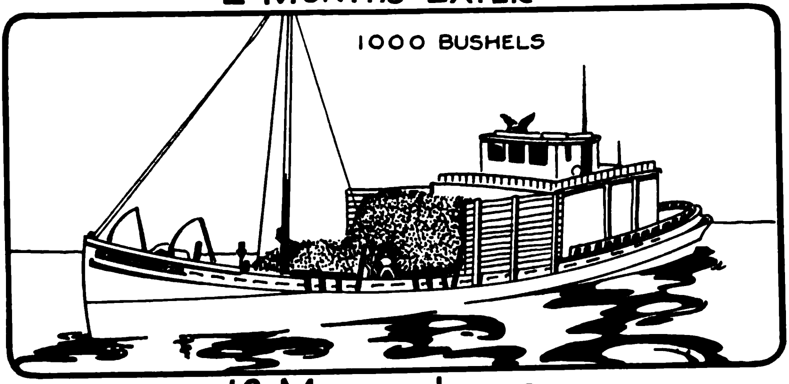
READY TO SET



1 MONTH LATER



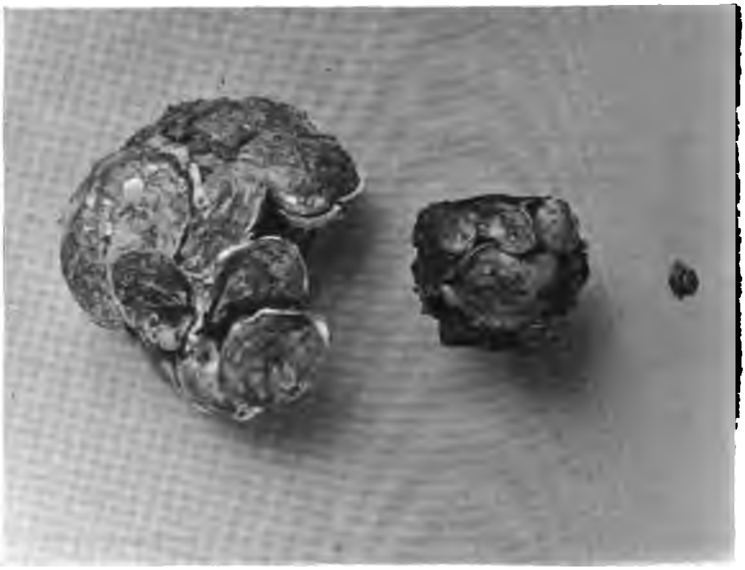
2 MONTHS LATER



12 MONTHS LATER

certain stages in their development. For many years the young oysters or "spat" have been obtained from the mouths of the estuaries along the sea front of Connecticut. These "spat" have been grown on suitable areas along the shores of Long Island Sound and in Peconic Bay and neighboring waters and the matured oysters fattened for the market in Great South, Raritan and Jamaica Bays. The present failure of the industry is due to the decreasing supply of "spat" obtainable from Connecticut.

The Source of Seed Oysters. Adult oysters have no power to move from place to place. The young oyster is a microscopic free floating organism and remains in this condition for a period of from ten days to a month. At the end of that time it adheres to some solid object and, unless moved by human agency, remains in that general neighborhood for the remainder of its life. During this drifting period the young oyster is entirely at the mercy of the winds, waves and currents, and the vast majority of them are swept out to sea, or elsewhere, where it is impossible for them to develop. In general, the favorable points for obtaining a "set" of seed oysters are determined by the currents and other hydraulic conditions, and it has been found that the most favorable locations are enclosed bodies of water, such as Great South Bay, or the eddies formed at the mouths of the tidal estuaries. Unfortunately, conditions in such enclosed bodies of water are often unfavorable for the healthy after-development of the oyster, so that the principal source of seed supply is from the estuaries. For this reason the Connecticut areas have been particularly productive.



Group of oysters one month after setting, two months later and twelve months later.

Failure of Seed Supply. It is unfortunate for oyster culture that these estuaries are most valuable harbors. The parents of the seed oysters were to be found in the natural growth beds well up these estuaries. The requirements of commerce have caused these streams to be lined with bulkheads, dredged to considerable depths and the towns and industries which have grown up about them have polluted the waters of the harbors. All of these causes, together with over-fishing of the grounds, have resulted in complete or partial extermination of parent oysters, and it seems that the present failure to obtain seed is due to a combination of these causes.

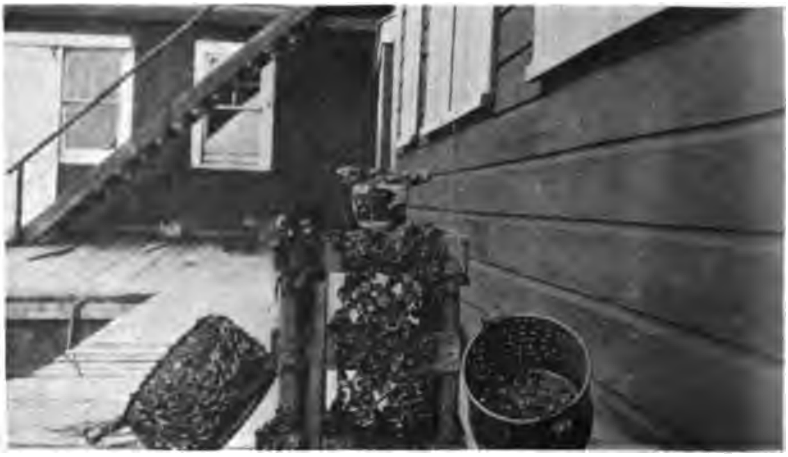
New Methods Must be Developed. Stream pollution has been claimed to be the chief cause of the failure to obtain a "set" of seed oysters in recent years. Undoubtedly it has largely contributed to bring about this condition, but the pollution complained of is not in the jurisdiction of the State of New York. Practically the only "setting" grounds in this State were in the Hudson river and about Staten Island; although these beds may have suffered from pollution, their complete restoration would not insure a sufficient supply of seed for our oyster industry. New York State has always been dependent upon Connecticut for the bulk of its seed supply. This supply has not only been greatly curtailed, but a proposed embargo on the exportation of seed oysters from Connecticut threatens to cut it off entirely. The rahabilitation of the New York oyster industry requires the development of new methods of obtaining seed oysters.

"Set" in Great South Bay. Oyster spat can usually be obtained in Great South Bay and at intervals of a few years the set in that locality is heavy. During the past summer it was enormous. The method heretofore used in collecting "spat" is to spread oyster shells on the bottom, on which shells the young oysters "set." When they are large enough to stand transportation, the shells and adherent young oysters are dredged up and laid down upon the growing grounds. Great South Bay is shallow and contains an enormous amount of aquatic life other than oysters. As a result the water at the bottom of the bay becomes stagnant, depleted of food material for oysters and also of the absorbed atmospheric oxygen, without which all gill-breathing animals must suffocate. Adult oysters have sufficient strength to create currents in the water, which bring food and oxygen to them; young oysters cannot do this. As a result, all of the myriads of oysters which last summer set upon the bottom of the bay lived but a few weeks. Great South Bay cannot, therefore, with the cultural methods now in use be depended upon as a source of seed.

New Methods of Seed Culture. There being no areas within this State in which a sufficient quantity of "spat" can be obtained by present methods, the rehabilitation of our oyster industry depends upon our ability to devise new methods of obtaining seed oysters which will be commercially practicable. Two promising lines of development offer themselves: first, the actual rearing of the young oysters under controlled conditions until they are of such size that they can be planted upon the growing grounds; and second, the improvement of the method of "spat" collection so as to enable the "set" which can be obtained in Great South Bay and similar bodies of water to be reared to commercial size.

Artificial Propagation Commercially Practicable. Attempts at the artificial propagation of oysters have been made from time to time for many years. Until the summer of 1920 these were all failures, owing to the impossibility, with the apparatus used, of preventing the escape of the larval oysters. It is necessary in any cultural process to change the water in which the oysters are kept in order to renew the food supply and to carry away the wastes created by the oysters themselves. As the young oyster is most minute, it was long impossible to devise a practicable method of removing the water without removing the oysters at the same time. In 1920 the Conservation Commission perfected, under laboratory conditions, a method of accomplishing this end, and for the first time the native oyster of the east coast of the United States was raised from the egg to the setting point under controlled artificial conditions. During the past summer this method has been given further study under laboratory conditions, with the result that much information on the technical side of the process has been accumulated. We are convinced that this method can be carried on on a commercial scale.

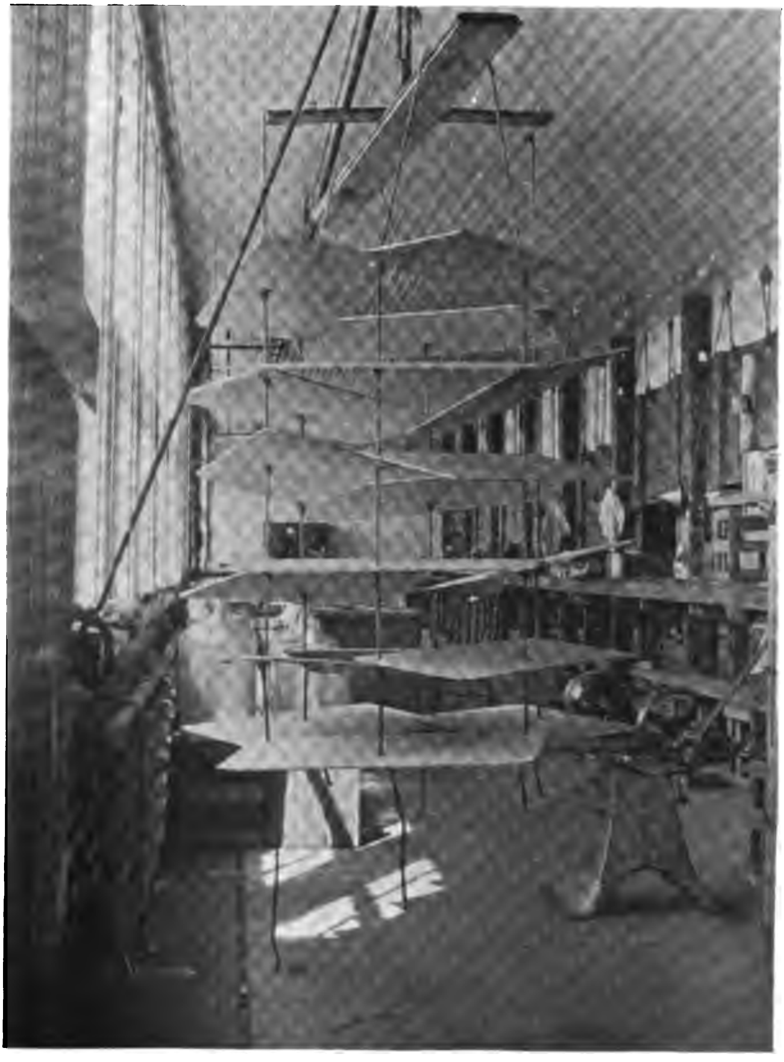
Young Oysters Must be Kept Above the Mud Line. In Great South Bay, during the summer of 1921, there was a tremendous "set." Apparently the early, hot, dry summer produced conditions favorable for an enormous concentration of young oysters. They set not only on the shells placed for the purpose on the bottom, but on practically everything that was submerged in the water of the bay. The nets of the local fishermen were so encrusted with young oysters that it was found a tedious and expensive process to remove them. Practically all of the oysters which set on the bottom of the bay died within a few weeks; those which became attached to objects above the mud line throve tremendously. If all the oysters on the fishermen's nets had been preserved, as they might readily have been by suspending these nets in the bay, enough seed oysters would have been obtained to carry the industry on for a year or so. This suggests the possibility of devising a form of "spat" collector which would hold the oysters above the stagnant water near the mud line until they developed sufficiently to be transportable to Peconic Bay or other growing grounds. This is a method somewhat parallel to that successfully used with the European oyster and is one of great promise. It should be taken up and the best form of collector determined by experiment.



Young oysters on nets and other objects in Great South Bay Throve above the mud line.

Better Oysters Obtainable. Successful European practice in "spat" collection cannot be followed in our waters on account of the high labor cost of separating the small oysters from the collector. If larval oysters can be made to set thickly on prepared plates, the shells will grow upward from the surface, giving what is known as "corn-on-the-cob set." Such "set" can readily be detached and the resulting small oysters can cheaply and easily be handled and will produce mature oysters of superior quality. This essential concentration of "spat" can be obtained in the tanks of a hatchery, in a locality like Great South Bay under such conditions as prevailed last summer, and perhaps annually in certain favored spots. It remains only to work out the technical details of such collection in commercial quantities.

Artificial Shellfish Hatchery. It is the opinion of this Commission that it is of the utmost importance to the oyster industry of this State and of material importance to the State as a whole that experimental work on the development of oysters be continued, but it believes that further studies must be made on a commercial rather than a laboratory scale. This can be done at comparatively small expense. The Commission already has at Cold Spring Harbor the necessary buildings to house the work and facilities for obtaining a supply of suitable water. It already has a portion of the necessary apparatus. The Commission proposes to establish at Cold Spring Harbor an experimental shellfish hatchery of such capacity that it should be able, when the technique of the process has been established, to produce annually marketable seed oysters of approximately $5,000 value. An appropriation of about $2,500 will purchase the necessary equipment, and a total appropriation of $5,000 will be sufficient to cover the installation and operation of this hatchery for a year and also the carrying on of studies as to the best form of collector to be used in Great South Bay. The Commission believes that the fisheries of the State of New York can in no



Collector for 100,000 oyster spat.

way receive a greater benefit than by the appropriation of such a sum for this purpose.

Both Industry and State Will Benefit. Not only will the successful development of a commercial method of oyster propagation benefit the oyster industry of the State and thereby indirectly the people the State, but there will be a direct and immediate financial return to the State itself. The State of New York and certain coast counties and towns own the greater part of the growing and fattening beds in the State. These are leased and the proceeds from these leases and taxes on oyster lands in general are an important source of income. On account of the limited amount of seed available, less than one-sixth of the grounds suitable for oyster culture have ever been taken up and those which have been leased are rapidly being given up. In 1915, 34,000 acres of oyster land were returning a direct revenue to the State. In 1921, this amount had shrunk to 21,084, and the loss will continue with increasing rapidity unless a supply of seed becomes available in the immediate future. The income of the State, due to lack of seed, is already more than $10,000 a year less than it was in 1915. The Commission believes that by the establishment of the proposed experimental hatchery and the operation of it for a few years improved methods of oyster culture will be perfected so that the industry can be brought back to a point such that not only will the lands previously leased be again taken up, but an even greater area of land will be utilized and the direct revenues of the State correspondingly increased. Four hundred thousand acres of State owned submerged land, now unused, can be made productive and a direct source of income to the State by the development of a cheap method of obtaining seed oysters.

Oyster hatchery — 100,000 oysters per day.

TABLE II

MILLION OYSTERS AT VARIOUS STAGES OF CULTURE; VOLUME; AREA OCCUPIED AND ESTIMATED VALUE

AGE	Stage	Volume	Area	Value total	Value per bushel
Ready to " set "	Tanks	2 cubic inches	63 sq. ft.	..	..
1 month	Collectors	10 bushels	1,000 sq. ft	$400	$40 00
5 months	Basins	250 bushels	0.33 acres	500	2 00
1 year	Beds	850 bushels	2 acres	1,700	2 00
2 years	Beds	1,400 bushels	4 acres	2,800	2 00
3 years	Beds	2,500 bushels	8 acres	5,000	2 00
4 years	Beds	3,500 bushels	10 acres	7,000	2 00

CUTTING TREES ON PRIVATE LAND

Opinion of the Attorney-General as to the Power of the Legislature to Regulate

In response to an inquiry from the Conservation Commission as to what authority the Legislature has under its police power to regulate the cutting of trees on private land, the following opinion was received from the Attorney-General:

June **16, 1921.**

Hon. ELLIS J. STALEY, ***Conservation Commissioner, Albany, N. Y.:***

INQUIRY

" DEAR SIR.— Has the Legislature, under the police power of the State, constitutional authority to regulate the cutting of trees upon privately owned land?

" You have requested my opinion upon the extent of the constitutional authority of the Legislature, in the exercise of the police power of the State, to regulate the cutting of trees on privately owned land.

" Your inquiry involves the constantly recurring conflict between present private property, as such rights have grown to be regarded, and the public welfare, present and future, as changing social and economic conditions constrain many to consider the ever-increasing demands of a rapidly growing population. Your inquiry necessarily involves the question whether forest destruction has yet advanced to that degree of spoliation and public detriment that the Legislature would be justified in extending the broad police power of the sovereign to the limitation of men's method of cutting trees on their own lands and for perfectly legal and proper purposes. That is primarily a question for the Legislature to decide, for only upon such determination by the Legislature, based on sufficient proof, can such legislation be justified.

" In view of the fact that this attribute of government is not fixed; but adapts itself to constantly changing conditions even as society, its organizations, its methods, its circumstances change, an answer to your inquiry involves as much the foresight of a seer as the research and deliberation of a lawyer. Especially is this so, as our courts have recognized the necessity of measuring the validity of such statutes by the demands of the times, rather than by the rigidity of written constitutions. They have held a law an unconstitutional attempt to exercise the police power, and a few years later a similar enactment valid because of circumstances arising since the first decision, or of evidences of critical conditions existing at the time of the prior determination but not then brought to the attention of the court.

"A striking example of such divergent decisions presents itself in the cases of People v. Williams (189 N. Y. 131), decided in 1907, and People v. Charles Schweinler Press (214 N. Y. 395), decided in 1915. In the Williams case a statute of 1903, forbidding the employment of adult women in factories before six o'clock in the morning and after nine o'clock in the evening was held inimical to the constitutional provisions guaranteeing to every citizen freedom of lawful employment, and as discriminative against female citizens in denying them equal rights with men. The opinion in the second case asserts that while the statutes in both cases are not substantially different in purpose, yet the two cases may be really and substantially differentiated, and says:

> " 'So, as it seems to me, in view of the incomplete manner in which the important question underlying this statute — the danger to women of night work in factories — was presented to us in the *Williams* case, we ought not to regard its decision as any bar to a consideration of the present statute in the light of all the facts and arguments now presented to us and many of which are in addition to those formerly presented, not only as a matter of mere presentation, but because they have been developed by study and investigation during the years which have intervened since the *Williams* decision was made. There is no reason why we should be reluctant to give effect to new and additional knowledge upon such a subject as this even if it did lead us to take a different view of such a vastly important question as that of public health or disease than formerly prevailed. Particularly do I feel that we should give serious consideration and great weight to the fact that the present legislation is based upon and sustained by an investigation by the legislature deliberately and carefully made through an agency of its own creation, the present factory investigating commission.'

" Thus it is manifest that the necessary consideration of existing, or seriously apprehended exigencies, rather than adjudicated precedents, renders the more uncertain and unsatisfactory an opinion on the constitutional validity of prospective legislation involving the exercise of the police power.

"Attempts have been made to define the police power. But almost as often as judges have resorted to definitions of this function of government, they have admitted the difficulty, if not the impossibility, of correct and comprehensive delineation and have turned to explanation and example. However, from a few of the well nigh innumerable judicial opinions — few, if any, subjects of the law have been so widely and frequently discussed — it can be gleaned that it is possessed by every sovereign state (In re Jacobs, 98 N. Y. 98), is inherent in the states of the American Union (People v. Budd, 117 N. Y. 1), and it is determined as each case presents itself whether there the power was properly invoked. It rests to a large extent on those ancient maxims of the law: 'So to use your own that you will not injure another,' and 'The safety of the people is the supreme law,' and the vital principles of both must be regarded and enforced.

"Usually when occasion arises for assailing a specific exercise of the police power, those, who believe their rights or property invaded and hence seek to overturn the law so effecting such result, invoke the fourteenth amendment to the Federal constitution and kindred provisions in the constitutions of the states. Such provisions declare that no state, 'shall deprive any person of life, liberty, or property without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.' Considering the effect of such constitutional guarantees, Judge Field, in Barbier v. Connolly (113 U. S. 27), significantly observes:

> "'But neither the amendment — broad and comprehensive as it is — nor any other amendment, was designed to interfere with the power of the State, sometimes termed its police power, to prescribe regulations to promote the health, peace, morals, education, and good order of the people, and to legislate so as to *increase the industries of the State, develop its resources, and add to its wealth* and prosperity.'

"I have directed attention to the adherence of the courts to the determination of the necessity and legal propriety of the use of the police power in each case as it is presented. Your inquiry can be illumined and mainly answered by presenting some cases, both in this state and elsewhere, in which this power has been invoked to limit and restrain the owner in the use of his own property on his own land, for the avowed purpose of promoting the welfare of the community or a considerable part thereof.

"In Indiana, the legislature had declared by act that 'The use of natural gas for illuminating purposes in what are known as flambeau lights, is a wasteful and extravagant use thereof, and is dangerous to the public good.' The statute then forbade such use of natural gas and made the violation of the prohibition a misdemeanor. The same law also prohibited the burning of the lights which might be legally used between 8 a. m. and 5 p. m. That act was upheld as a valid exercise of the police power and as properly invoked to conserve the gas supply of the state. (Townsend v. State, 147 Ind. 624; 49 NE. 19.) It should be observed, however, that the court looked upon such gas as similar in character to fish and game, in that it came from a common reservoir underlying the lands of other persons than the defendant, each of whom had equal right with him to draw upon such supply, and any particular portion of such accumulation was not the property of any particular person until reduced to possession by him. Hence, as the court there said, one, tapping the common supply, could be so restricted as not to impair an equal right in others.

"Following the principle enunciated in the Indiana case, the Court of Appeals in this state in *Hathorn* v. *Natural Carbonic Gas Co.* (194 N. Y. 326), upheld an act of our legislature prohibiting the drilling in a specified locality into the rock for the purpose of extracting therefrom by artificial means water impregnated with minerals and containing in solution a high percentage of carbonic acid gas, for the purpose of separating such gas from the water and vending it separate from the water. Here, as in the Indiana case, the court seemed mainly to consider that such water was drawn from a common supply and that a law prohibiting the taking of that water by such methods and in such quantities as to impair the equal rights of others was a valid legislative act.

"The United States Supreme Court in *Lindsley* v. *Natural Carbonic Gas Co.* 220 N. Y. 61), approves the position of the state court with respect to its holding on the so-called anti-pumping law. In this case the contention having been made that the statute was invalid in that it indulged in unfair and inequitable classification, and hence discriminaton, the court laid down the following rules with respect to the police power as applicable in that case and which are generally applicable to all attempts at such legislation:

> "'The rules by which this contention must be tested, as is shown by repeated decisions of this court, are these: 1. The equal protection clause of the Fourteenth Amendment does not take from the State the power to classify in the adoption of police laws, but admits of the exercise of a wide scope of discretion in that regard, and avoids what is done only when it is without any reasonable basis and therefore is purely arbitrary. 2. A classification having some reasonable basis does not offend against that clause merely because it is not made with mathematical nicety or because in practice it results in some inequality. 3. When the classification in such a law is called in question, if any state of facts reasonably can be conceived that would sustain it, the existence of that state of facts at the time the law was enacted must be assumed. 4. One who assails the classification in such a law must carry the burden of showing that it does not rest upon any reasonable basis, but is essentially arbitrary. *Bachtel* v. *Wilson*, 204 U. S. 36, 41; *Louisville & Nashville R. R. Co.* v. *Melton*, 218 U. S. 36; *Ozan Lumber Co.* v. *Union County Bank*, 207 U. S. 251, 256; *Munn* v. *Illinois*, 94 U. S. 113, 132; *Henderson Bridge Co.* v. *Henderson City*, 173 U. S. 592, 615.

"The State of Massachusetts in 1845 adopted a law forbidding any person to 'take, carry away or remove . . . any stones, sand or gravel from any of the beaches in the town of Chelsea,' and prescribing a penalty for its violation. The defendant indicted for violating such statute did not deny the commission of the inhibited acts, but insisted that he was owner of the land from which such material was taken and that the act could not therefore apply to him, and that, if it did, it was unconstitutional and void. The object of the law was obvious, to protect the harbor of the city of Boston by preserving the integrity of its beaches and natural embankments. The position of defendant was condemned, and the validity of the act sustained (Commonwealth v. Tewksbury, 11 Met. 55), the court saying:

> "'The court are of opinion that such a law is not a taking of the property for public use, within the meaning of the constitution, but is a just and legitimate exercise of the power of the legislature to regulate and restrain such particular use of property as would be inconsistent with, or injurious to, the rights of the public.'

"It then refers to the disastrous effects upon Plymouth harbor of the cutting away of wood upon its beaches and the great consequent expense to both State and Federal governments of the artificial restoration of such beaches, and concludes:

> "'Without hazarding an opinion upon any other question, we think that a law prohibiting an owner from removing the soil composing a natural embankment to a valuable, navigable stream, port or harbor, is not such a taking, such an interference with the right and title of the owner, as to give him a constitutional right to compensation, and to render an act unconstitutional which makes no such provision, but is a just restraint of an injurious use of the property, which the legislature have authority to make."

"The reference to Plymouth Beach in this opinion, above noted, is significant in that the opinion says:

> "'*In consequence of cutting away the wood upon it* or from some other cause, it was washed away and broken through by the wind and sea, and the navigation was in danger of being wholly destroyed.'

"The fair inference from the opinion is that it was within the power of the state to have forbidden the cutting of shore-protecting trees as well as to prohibit the removal of sand and gravel serving the same purpose and without compensation to the owner. This case is cited in 159 U. S. 399 as illustrative of the exercise of the police power and without unfavorable criticism of its doctrine. In *Hodges* v. *Perine* (24 Hun, 516), an act of the Legislature (Chap. 190, Laws 1878) made it a misdemeanor for any person to remove sand or other similar material from the beach of the South Shore of Staten Island opposite and contiguous to the boulevard from within twenty feet of ordinary high water mark so as to injure such highway. An owner of land within the prohibited area sought an injunction restraining certain persons, acting under authority of this law, from entering on his premises and interfering with their use, and from threatening the crews of vessels loading sand from such beach. A temporary injunction was dissolved, and the validity of the law sustained on the authority of the Tewksbury decision above quoted.

"The latest word of our highest court upon the question of the proper exercise of the police power is found in *People ex rel. Durham Realty Corp.* v. *LaFetra* (230 N. Y. 429), decided in March, 1921. Here was involved the constitutionality of the so-called 'Rent Laws' of September, 1920. These enactments wrought radical changes in the law of landlord and tenant, permitting the tenant to retain the use of the demised premises upon his payment of a reasonable rent, the reasonableness of such rent being a question of fact for a jury, although the landlord might be unwilling to continue the lease for such consideration. This series of statutes also suspended the landlord's remedy by summary proceedings. The period of operation of these laws was fixed at two years; and they were passed expressly to meet the emergency of rent profiteering in the city of New York. They operated to deprive the owner of his real estate during the term of their existence, provided only compensation fixed by another, not by such owner, was paid by the occupant; and attack was made upon these laws upon the grounds that they impaired the obligations of contracts as they applied in some instances to rentals fixed by agreement before the act took effect; that they deprived the owner of his property without due process of law; that they denied to the owner equal protection of the laws, and that they took private property for private use without compensation. The Court of Appeals upheld this drastic legislation upon the ground of the dire and acute emergency in the lack of dwellings for the people of congested centers of population and the advantage being taken of that situation by selfish landlords to extort exorbitant and oppressive rents.

"In the prevailing opinion by Judge Pound, the basic principles governing the exercise of the police power under the recognized existing emergency was well stated as follows:

> "'The question comes back to what the state may do for the benefit of the community at large. Here the legislation rests on a secure foundation. (*Chicago & Alton R. R. Co.* v. *Tranbarger*, 238 U. S. 67, 76, 77.) The struggle to meet changing conditions through new legislation constantly goes on. The fundamental question is whether society is prepared for the change. The law of each age is ultimately what that age thinks should be the law. Decisions of the courts in conflict with legislative policy, when such decisions have been thought to be unwisely hard and stiff, have been met by constitutional amendments . . . ."

"The United States Supreme Court has sustained the doctrine of the LaFetra case in Marcus Brown Holding Co. v. Feldman (N. Y. Law Journal, April 23, 1921).

"The expression of judicial opinion, bearing most directly on the question you propound, which I have been able to discover, occurred in the State of Maine. (Opinion of Justices, 103 Me. 506; 69 Atl. 627.) There, under a peculiar provision of the constitution of that state, the legislature could request, in advance, the opinion of the judges of the Supreme Court of that state on the constitutionality of a proposed law. Under that constitutional authorization, the Senate of Maine requested of the judges of the Supreme Judicial Court an opinion on the constitutional validity of a contemplated act; and the importance of their opinions as bearing on the matter before me, warrants some detailed attention to that injuiry and its determination.

"On March 27, 1908, the Senate requested an opinion thus:

> "'In order to promote the common welfare of the people of Maine by preventing or diminishing injurious droughts and freshets, and by protecting, preserving, and maintaining the natural water supply of the springs, streams, ponds, and lakes and of the land, and by preventing or diminishing injurious erosion of the land and the filling up of the rivers, ponds, and lakes, and as an efficient means necessary to this end, has the Legislature power under the Constitution:
>
> (1) By public general law to regulate or restrict the cutting or destruction of trees growing on wild or uncultivated land by the owner thereof without compensation therefor to such owner?
>
> (2) To prohibit, restrict or regulate the wanton, wasteful, or unnecessary cutting or destruction of small trees growing on any wild or uncultivated land by the owner thereof, without compensation therefor to such owner, in case such small trees are of equal or greater actual value standing and remaining for their future growth than for immediate cutting, and such trees are not intended or sought to be cut for the purpose of clearing and improving such land for use or occupation in agriculture, mining, quarrying, manufacturing, or business or for pleasure purposes or for a building site; or
>
> (3) In such manner to regulate or restrict the cutting or destruction of trees growing on wild or uncultivated lands by the owners thereof as to preserve or enhance the value of such lands and trees thereon and protect and promote the interests of such owners and the common welfare of the people?
>
> (4) Is such regulation of the control, management or use of private property a taking thereof for public uses for which compensation must be made?'"

"Six of the eight judges of that court joined in sustaining such power in an opinion, the vital part of which is:

> "'Regarding the question submitted in the light of the doctrine above stated (being that of Maine and Massachusetts at least), we do not think the proposed legislation would operate to 'take' provate property within the inhibition of the Constitution. While it might restrict the owner of wild and uncultivated lands in his use of them, might delay his taking some of the product, might defer his anticipated profits, and even thereby might cause him some loss of profit, it would nevertheless leave him his lands, their product, and increase untouched, and without diminution of title, estate, or quantity. He would still have large measure of control and large opportunity to realize values. He might suffer delay, but not deprivation. While the use might be restricted, it would not be appropriated or 'taken.'
>
> '"There are two reasons of great weight for applying this strict construction of the constitutional provision to property in land: (1) Such property is not the result of productive labor, but is derived solely from the state itself, the original owners; (2) the amount of land being incapable of increase, if the owners of large tracts can waste them at will without state restriction, the state and its people may be helplessly impoverished and one great purpose of government defeated."

"From the few decisions, to which I have referred, it can be deduced that the domain of the police power is mutable coincidentally with the changes in society, that it must appear convincingly to the court that a public emergency, present or reasonably anticipative, exists that demands a remedy not available without curtailing usually recognized private rights of property or action, that the restrictions or limitations placed upon individuals apply equally to all within the same prescribed class or classes, and that the means adopted are reasonably designed to attain the objects sought.

"In the gas and mineral water cases, the courts sustain the exercise of the police power upon the ground that the prescribed acts impair the equal rights of others possessing identical interests in a common supply. In the cases prohibiting the removal of sand from the seashore and restricting the cutting of trees on privately owned land, the authorization for the use of this extreme power is placed on the broad basis of the public necessity of adequate transportation and the protection of the water supply of the state. In modern society facile means of transportation of men and commodities are absolutely indispensible to human existence. Likewise if the flow of rivers ceases, and lakes and ponds supplying such streams violently fluctuate from flooded banks to shallow basins the power, propelling factories and mills, and the waters for public and personal consumption may become so irregular and uncertain in their flow that industry would wane, unemployment would increase, health would be impaired, fires would destroy accumulated wealth, and the resources of the state would disappear even as they have been destroyed by war. In like manner the vast forests of the state have so disappeared from the activities of man that the materials much used in constructing the homes of men are obtainable only in more and more remote and inaccessible places and have so risen in cost that, due in part to such conditions, thousands of people are without homes suitable and proper for their physical, mental and moral growth and welfare.

"If, therefore, it can be shown to the satisfaction of the legislature and the courts that the cutting of immature trees, coniferous or hard, or both, on private lands, has so contributed, or is likely so to contribute, to such disastrous consequences as to actually threaten the sources of the water supply, indispensable to the life of the people, or even the present or future protection of timber necessary for the industries by which the people in large parts of the state live and for the construction of habitations in which they may dwell, then I am inclined to think that to meet such a crisis the legislature may properly, within its constitutional power, limit the right of an individual to use his own without regard to effect upon his fellows, and to compel him to consider the higher and greater right of the safety of the whole people in his use and application of that which only by the grace of the state, that is, the people, he is permitted to possess.

> "'As was said by Chief Justice Shaw, 'It is a settled principle, growing out of the nature of well ordered civil society, that every holder of property, however absolute and unqualified may be his title, holds it under the implied liability that his use of it may be so regulated, that it shall not be injurious to the equal enjoyment of others having an equal right to the enjoyment of their property, nor injurious to the rights of the community.' *Commonwealth* v. *Alger*, 7 Cush. 53, 84, 85.'
> St. Louis & San Francisco R'y. v. Mathews, 165 U. S. 1, 23.

"If to protect an individual or a number of individuals in their common rights, is to insure free passage from place to place of people and commodities for the benefit of the public welfare and the progress of society, the law can say that men shall use, or refrain from using, in a specified manner, their land and its products, why can not the same power of the state direct and control individual effort so as to prevent the destruction, or diminution of natural resources, as vital to the general welfare and as essential to commerce as harbors for ships and roads for vehicles? Surely the full, free development of the subject-matter of commerce, is as necessary, as vital, as generally beneficial, as the means by which the products of man's industrial efforts are distributed. Without production there can be no transportation; and without consumers there is no need of either.

"In drafting an act to effectuate such purpose, the rules and principles which I have attempted generally to outline should be observed. A substantial deviation from them would jeopardize the law. A strict adherence to them, especially in showing the emergency to exist, may impel the legislative branch of government to enact, and constrain the judicial branch to sustain, a tree-conserving law.

"I have refrained from submitting the form of the proposed Act. I do that on this ground. I do not consider it, in any way, the function of this office to formulate the policy which will govern another department, in the absence of a statute specifically placing such duty upon the Attorney-General. Your inquiry goes to the legal question of power, not to the present necessity of such legislation, which is a question of policy for the legislature. 'The scope of judicial inquiry in deciding the question of *power* is not to be confused with the scope of legislative considerations in dealing with the matter of policy.' (*People ex. rel. Durham* v. *LaFetra, supra.*) Nor should you overlook the fact that this opinion, given and answer to your very general inquiry, is of necessity, academic in character and should not be construed as approving or disapproving any specific act. I can pass on such proposed law only when its form and substance are submitted to me."

Yours respectfully.
(Sgd.) CHARLES D. NEWTON.
Attorney-General.
By (Sgd.) WM. T. MOORE.
Deputy.

DIVISION OF FISH AND GAME

DIVISION OF FISH AND GAME

Llewellyn Legge	*Chief Protector*
John T. McCormick	*Deputy Chief Protector*
Mannister C. Worts	*Superintendent of Inland Fisheries*
Emmett B. Hawkins	*Supervisor, Bureau of Marine Fisheries*
Sumner M. Cowden	*Field Superintendent*

DIVISION OF FISH AND GAME

The receipts of the Division of Fish and Game covering the fiscal year beginning July 1, 1920, and ending June 30, 1921, exceeded by $8,005.67 receipts ever heretofore collected over a like period. The total receipts of the Division during the fiscal year here covered amounted to $432,102.46. This gain is not the result of any unusually large collection of fines or penalties, but is rather, with a few exceptions, the general uniform advancement naturally expected to follow a vigorous and aggressive campaign of education and law enforcement such as has been carried on during the fiscal year.

Receipts of Division of Fish and Game, Fiscal Year Ending June 30, 1921

Hunting and trapping licenses	$274,888 16
Fines and penalties	77,727 70
Net licenses	27,564 21
Tax and rentals on shellfish lands	20,845 69
Non-resident fishing licenses	14,639 24
Tagging of game	6,207 20
Dog licenses, section 193	2,434 00
Trout tags	1,890 00
Sale of carp	1,635 40
Importation licenses, section 178	774 00
Breeders' licenses, section 372	685 00
Sale of duplicate hunting and trapping license buttons	616 65
Venison licenses, section 191	546 00
Scientific and propagation licenses, section 159	408 00
Fur bearing animal licenses, section 200	275 00
Sale of skins confiscated	244 89
Sale of trout tagging machine	200 00
Sale of boats (Caroline and Oneida)	200 00
Spearing licenses	131 19
Refund on pheasants from American Express Co	75 00
Rental on trout tagging machines	62 00
Special protectors' badges	27 00
Breeders' licenses section 377	20 00
Refund on engine	6 13
Total	$432,102 46

The principal sources of revenue showing losses over last year are the sale of confiscated skins, and the tax and rentals on shellfish grounds. These losses were not unlooked for. With the sharp decline in the price of raw furs it was expected that the receipts from this source would not equal those of last year — a banner year. The loss in receipts from taxes and rentals is due to the surrendering of leases on shellfish grounds in the marine district by oystermen, due to their failure for the fifth consecutive year to obtain a "set." This subject is discussed more at length elsewhere in the report.

The largest gain shown is in the receipts from fines and penalties collected as a result of actions instituted by the game protectors against persons for violating the Conservation Law in relation to fish and game. The gain here amounts to 7,395.63, an average gain per protector of over $56.00.

GAME PROTECTION

During the fiscal year ending June 30, 1921, the State game protectors prosecuted 4,156 cases of violations of the Conservation Law in relation to fish and game. The disposition made of these cases was as follows: Fines or settled favorably to the State, 3,512; suspended sentences, 96; acquittals, cancelled or withdrawn, 66; jail, 4; licenses forfeited, 478. The percentage of cases prosecuted this year in which the result was unfavorable to the State was the smallest in the history of the protective force, being less than two per cent. The average number of cases prosecuted by each protector was [illegible]. The game protectors of New York State lead the protectors of all other states in average number of cases prosecuted per man. The police force of the city of New York, perhaps the most efficient in the world, has a yearly average of about 18 arrests per man.

Flock of Blue Bills.

The gross amount of fines and penalties imposed on violators of the Conservation Law totalled $82,499.74. Of this amount $81,719.64 arose out of the prosecution of cases by inspectors and regular protectors, and $780.10 out of the prosecution of cases by agents and special protectors. The average recovery of inspectors and regular protectors was $571.46. The average recovery of agents and special protectors was $4.33.

The moneys actually collected and turned into the State treasury amounted to $77,727.70. The difference between the fines imposed and the money turned into the State treasury represents costs of court. The net recovery this year is larger by $7,395.63, or 10 per cent, than it was last year.

Court Costs. In addition to the $4,772.04 retained by the justices as costs, there were disbursed to justices, constables, attorneys and stenographers, for services rendered in the prosecution of cases, $2,115.00 making the total cost of prosecuting all violators $6,887.04. Of this amount but $778.90 was paid as attorney fees, an average of less than eighteen cents per case. The infrequency with which the protectors found occasion to employ the services of attorneys reflects the success of the efforts of the Commission to so educate them in court procedure that they may appear in justices' court as prosecuting attorneys, thus saving to the State the money it had been wont to pay for such services. The average cost of prosecuting each case was $1.66.

Special Protectors. There are 180 special game protectors in the service. Special protectors are appointed in the option of the Commission and serve without pay during its pleasure. Applicants for appointment are usually men in sympathy with the enforcement of the fish and game laws and actuated by desire to see the wild life of the State better protected. These men are generally sportsmen and owners and keepers of game preserves. The position does not require that any definite time be devoted to the work. Specials are expected to prosecute such violations as come to their attention, transmit to the Commission complaints of violations of the Conservation Law that cannot be personally handled, and cooperate with the regular protectors when called upon to do so. While only a limited number of specials detect and prosecute violators, they exert an influence that tends to create a better respect for the game laws in the community in which they reside. In the opinion of the Commission there are now in service as many special game protectors as the public needs require. Hereafter there will be appointed only occasionally a few specials who demonstrate peculiar qualifications for the position.

Special Work. Numerous complaints having been received by the Commission of the wholesale slaughter of deer and total disregard for the laws giving protection to the wild life of the State in the Adirondack mountains during the hunting season of 1919, the Commission last season designated fifty of its gmae protectors to work in the northern deer counties. The protectors worked in pairs and were so distributed that the territory covered by one detail overlapped that of another, in this way assuring the policing of every section of the deer country. Two weeks were spent in the work and evidence sufficient to warrant action being taken against over 180 persons secured. Up to date eighty-one persons have admitted violating the law, and settled for penalties aggregating $7,415, an average of over $90 per individual. There are still in process of settlement about 100 cases. Inspector C. E. Underhill has been assigned to the work of adjusting these matters, and is carrying it on with all dispatch. When the last case is disposed of it is expected that over 200 persons will have settled for their illegal acts of last fall, and that upwards of $15,000 in penalties will have been collected.

Shipping Permits. Provision is made in section 178 of the Conservation Law whereby persons legally taking nonsaleable fish and game in this State may transport it, without accompanying, during the open season therefor. At one time these permits were also required for the transportation of fish and game from a point without the State to a point within, but the law has since been amended. During the fiscal year there were approximately 20,000 of these shipping permits issued, 4,000 more than were issued in any year prior to the amending of the law permitting the importation of fish and game without permit. These permits, therefore, were used in the transportation of fish and game taken in this State.

The shipping law, as at present framed, permits a person to go into the hunting or fishing grounds of this State and take and ship, often to a point in some distant State, the bag limit of nonsaleable fish and game on which the season is open. For example: In the month of October a person may at one time ship to another in the State of Texas, 1 deer, 25 ducks, 8 geese, 8 brant, 3 pheasants, 15 plover, 25 snipe, 25 gallinules, 15 black bass, 5 squirrels, 2 grouse and 4 woodcock. While it is true it would be quite impossible for a person to take all these animals in one day, nevertheless there is no restriction against accumulating and transporting by common carrier at one time such a shipment. Nor is there any restriction against the operation being repeated as many times as the taker has shipping permits. True, the Commission has no knowledge of a shipment of such proportions ever having been made, but it does know of instances where the bag limits of different species have been for days accumulated and shipped at one time, thus reserving for future use the remainder of shipping permits, six being allowed to a person in a year.

Most every person who hunts knows that the open seasons as at present fixed are as liberal as the animals can stand without bringing about a condition of threatened exhaustion. This is attested to by the yearly increasing numbers of petitions received by the Commission praying that additional protection be granted to fish and game in certain localities, in most instances giving as reasons for so requesting that fish and game are on the verge of extermination. At the present time there are effective forty-one orders, either lowering the bag limit, affecting the open season, or closing the season entirely.

Unquestionably one of the leading factors in bringing about the present depleted condition of many species of our wild game is the shipping permit. Aside from the transportation of deer its use should not be permitted. Persons taking game in this State and desiring to transport it, should be made to accompany it. To permit its transportation by common carrier only invites in the fish and game that which every effort in the past ten years has been made to wipe out—commercialism. In many states the sale of wild game is permitted; shipping permits encourage the shipment of fish and game to the markets of these states.

Hauling canoes over a beaver dam on Adirondack cruise.

Were the law providing for the shipping permits repealed, or amended to allow each person but two permits, one for the shipment of quadrupeds and birds, and one for the shipment of fish, it would no doubt, to a great extent, alleviate the ever-increasing drain on the wild life of the State, which in many sections of the State during the past few years has reached a point where intervention by the Commission was necessary to save the species from complete extermination.

Tip-Ups. Tip-ups may be used for fishing through the ice, except in waters inhabited by trout, to take bullheads, catfish, eels, perch, sunfish, and except during the months of March and April, pike and pickerel, and except from March second to May tenth, pikeperch. Ffteen tip-ups may be used by a person.

In Lakes Erie, Ontario, Cayuga, Seneca, Oneida and the Finger lakes, the use of tip-ups in large numbers is not reflected in a falling off of the annual fish yield of these waters. But in waters of the size of Youngs and Weaver lakes in Herkimer county, Kinderhook and Knickerbocker lakes in Columbia county, Grass and Butterfield lakes in Jefferson county, and waters of a smaller area, the result of the use of large numbers of tip-ups is seen in the depletion of the species, often making necessary the closing of the waters for a period of years that the fish may come back to normal abundance.

It is not felt that the use of tip-ups should be entirely prohibited, but experience leads to the conclusion that the number that should be permitted, except in the large bodies of water of the State, should be materially decreased. Fifteen tip-ups used by the number of fishermen that avail themselves of this privilege will, in the course of a winter, take considerably more fish than would be taken by angling, and often a great deal more than the waters can safely yield without endangering the future supply.

In some sections of the State the proposition of tip-ups has become so serious that the Commission, upon petition of residents, and after holding a public hearing to determine the advisability of such action, issued orders either prohibiting entirely the use of tip-ups or reducing to five the number that may be used. There are operative at the present time orders affecting in this manner over forty different bodies of water.

The number of people who make a practice of fishing with tip-ups is increasing each year. Each year also brings to the Commission increased requests from sportsmen and farmers that the use of these devices be prohibited in certain waters on the ground that " their use is exterminating the fish." Evidence adduced at public hearings held on this subject throughout the State during the past year tends to bear out this conclusion. The Commission, therefore, feels that the law should be amended so as to allow the use of but five tip-ups to a person in all waters of the State, excepting those first above mentioned.

Deer. Last winter being an exceptionally mild and open one, the deer wintered well, and suffered little, if any, from lack of food. For the first time in a number of years there were no reports of deer suffering. In the summer and fall hunting months, the deer wander through the woods singly, or in parties of two or three. In the winter, when the snowfall is heavy, they gather in parties, often of a considerable size, where food is plentiful. There they remain throughout the season, forming a " yard " by keeping a net work of hard-beaten paths open through the snow in order to reach the browse of bushes and trees. In these yards during winters marked by continued heavy snowfalls the mortality among the deer often runs very high. The deer being unable to get beyond the yard soon exhaust all available food and slowly succumb to starvation, the older and weaker ones dying first. The State's game protectors keep a careful watch on these yards, and when the deer are confined for any prolonged length of time, or show signs of exhaustion, beaver meadow hay is cut and so placed that it may be easily reached. Many deer are thus saved that otherwise would perish. Last winter the cutting of hay was unnecessary, and the mortality among the deer herd was the lowest in recent years. A season or two ago, when the taking of deer of either sex was permitted, and the number of animals taken in an open season amounted to over 20,000, fear was felt that this was a drain far beyond that which the herd could stand. Under the present protective laws, the deer seem to thrive so well that their future appears assured.

Fur-Bearing Animals. The business of trapping fur-bearing animals in this State is extensive. In the trapping season of 1918, there were reported taken no less than 641,000 fur-bearing animals. The estimated commercial value of these animals, based on prevailing prices of that year, is $1,797,540.

The species of fur-bearing animals inhabiting this State are the muskrat, skunk, raccoon, fox, mink, sable or marten, otter, fisher, bobcat and bear. The chief fur-bearing animal of the State, in point of yield, is the muskrat. More muskrats are taken in this State each year than the combined number of all other fur-bearing animals, protected and unprotected. The number of muskrats reported taken in 1918 was 399,938. The animal showing the next highest yield is the skunk, of which in the year 1918, there were 187,703 taken. These two animals together with raccoon, mink and sable comprise the fur-bearing species protected in this State by law.

Foxes, otters, fishers, bobcats and bears are not protected by law in this State, and may be taken at any time, in any manner and in any number. The habits of these animals, excepting the bear, are recognized as [illegible] to the continuance of our more useful species, and their taking is encouraged. The destructive habits of the foxes are well known, and while their extermination would not at all be welcome, their alertness and capacity to meet requirements make further protection unnecessary. The fishers and bobcats are the most deadly of our forest carnivora. Shy and resourceful in their habits, and difficult of capture, they are in no immediate danger of extermination in this State.

American furs are the best in the market.

Unquestionably the fur-bearing animals trapped in the seasons of 1918 and 1919 far exceed the number taken in any of the ten previous years. In these years, encouraged by the abnormally high prices that prevailed for pelts, large numbers of persons, in addition to professional trappers, even including school boys, trapped with success. The season of 1920, therefore, found the larger markets, like those of New York and St. Louis, crowded with furs, and prices of pelts at a point where it did not pay to run a line of traps. Consequently, large numbers of trappers suspended operations for the year. This temporary suspension of trapping acted to give the animals just what they were sorely in need of — an opportunity to augment their greatly diminished numbers. Reports of protectors' observations of the animals this past summer are very encouraging, and it is expected that the checking of the abnormal drain of the past three years will be seen in increased numbers of the animals during the seasons to come.

Game Birds

To the act giving effect to the convention between the United States and Great Britain for the protection of migratory birds, concluded at Washington in 1916, must go much credit for the return in greatly increased numbers of those migratory birds that have each year for decades past been visiting our State in fewer numbers.

The Osprey — a harmless hawk which should be protected.

In many of the southern states, prior to the Federal act, there were no effective regulations governing the taking of migratory birds. Birds could be taken at any time, in any manner, and in any number, and each year there was an influx of hunters into these states who wantonly slaughtered large numbers of them. This unregulated killing was more and more each year reflected in decreased numbers of the birds returning to this State. Luckily in these southern states, as in New York for years, there are now regulations relating to seasons, limits, possession, manner of taking, and sale of game.

In the year following the passage of the Federal act there was a very noticeable increase of birds in the migration flights. Letters reaching the Commission from sportsmen and others all told of having observed more brant, ducks, geese, rails and shore birds than in any year during the past decade. The census cards of the protectors, upon which they are required to specify in detail the protected kinds of game birds and waterfowl seen, when compared with cards of years immediately preceding, showed that not only were migratory birds present in numbers far exceeding other years, but also many species of birds native to this State.

The most appreciable gain in the birds native to this State is in the grouse. In 1918 these birds were bordering on extinction in this State, and many reasons were being given for their depletion. The reason most commonly accepted, however, is that which told of how the great horned owls of the country to the north, suffering from lack of food, due to an epidemic which greatly diminished the number of rabbits, their chief source of winter food, were forced south. Being most destructive to all kinds of game, though showing preference for birds, these aerial pirates nearly succeeded in wiping out the grouse of this State.

So serious did the situation become that the Commission was forced to act to save the grouse from complete extermination. An order was accordingly passed, effective throughout the entire State, shortening the open season and reducing the day and season bag limits. So apparent was the need for this additional protection that the Legislature the following year amended the Conservation Law so as to provide for but one month's open season, and reducing the day limit of birds to two, and the season limit to ten. The birds have since been steadily increasing until there are now in the covers of the State more grouse than at any time during the past ten years.

The little Screech Owl is a useful mouser.

Seizure of Nets. During the fiscal year the protectors confiscated 355 illicit seines, gills, traps, fykes and squat nets. The estimated commercial value of these seizures is $11,010.95. This far surpassed the work in this line of last year when there were 275 seizures with an estimated value of $9,982.25.

Confiscated nets are held until they have outlived their usefulness as evidence, when either they are returned to owners, sent to State fish hatcheries, or destroyed by burning.

In addition to the above, there were 740 birds, fish, lobsters, quadrupeds and other miscellaneous species confiscated.

Skins Confiscated. From the sale of 147 skins and pelts of fur-bearing animals confiscated by the game protectors during the fiscal year the State realized $244.89.

While the receipts from this source are below those of last year, the loss is not attributable to any neglect or lack of supervision over the activities of the trappers, but to the fact that there was less trapping of fur-bearing animals last year than in any of the ten preceding years.

WAR ON VERMIN

In 1919 the Conservation Commission launched a vigorous capaign to lessen the number of animals whose proved habits are recognized as inimical to the interests of conservation. The animals whose influence investigation proved is more harmful than good are as follows:

Lynx
Red fox
Gray fox
Weasel
Porcupine
Great horned owl
Goshawk
Crow
English sparrow
Starling
Cooper's hawk
Snowy owl
Great gray owl
Bobcat
Hunting house cat
Red squirrel
House rat
Woodchuck
Sharp-shinned hawk

This list the Commission caused to be printed on the back of every hunting and trapping license issued, together with a request that they be destroyed whenever opportunity to do so is afforded. A like list was furnished each protector and a rifle, with instructions to carry it at all times when on patrol, and keep a record of the number and species destroyed. The record to date is very gratifying, there being killed upwards of 5,000 different animals during the fiscal year ending June 30, 1921.

When it is considered that the depredations of these species include such acts as gnawing trees and causing them to die, destroying corn and grain in the fields, killing song birds, destroying their nests and eating their eggs and young birds, digging holes in fields and making earth mounds, raiding vegetable gardens and poultry yards, it can be readily seen what an incalculable saving has accrued to the farmer and the sportsman from the destruction of these animals.

LICENSES, TAGS AND PERMITS

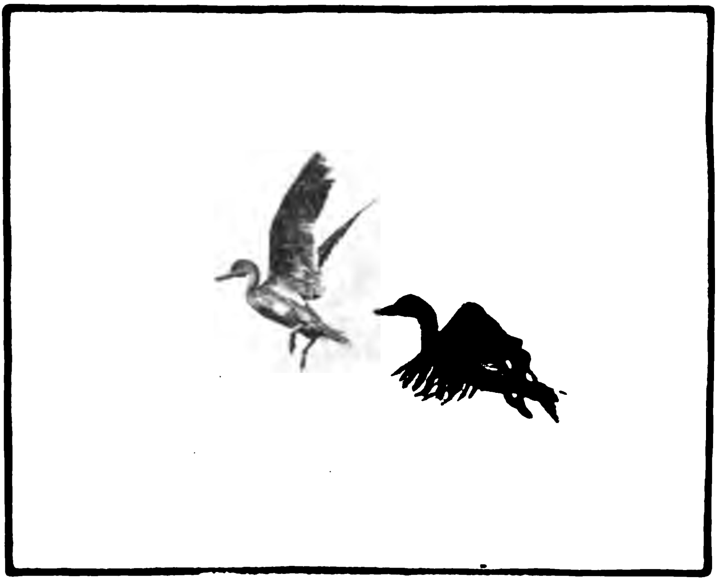
Hunting and Trapping Licenses. There were 284,496 resident hunting and trapping licenses and 4,046 nonresident hunting and trapping licenses issued during the fiscal year ending June 30, 1921. The price of a resident license is $1.10; the price of a nonresident license is $10.50. The sale of these licenses brought the State the sum of $274,888.16 net. This is $1,526.26 more than was received from this source the previous year.

The law making provision for hunting and trapping licenses provides that a fee of twenty-five cents shall be paid to each clerk issuing a resident license, and a fee of fifty cents for the issuing of a nonresident license. It further provides that there shall be paid to each county clerk 3 per centum of all moneys arising in his county from the sale of hunting and trapping licenses. During the period here covered such fees aggregated $71,292.60.

While it is not maintained that the fees paid to clerks for the handling of these licenses more than adequately compensates them for the labor entailed, it is felt that there should be a more equitable distribution of it. The price of a resident license has for years been $1.10, ten cents to be retained by the clerk issuing it. The licensee paid the ten cents' fee to the clerk, and the State paid the 3 per centum, postage and expressage. Two years ago the law was amended increasing from ten to twenty-five cents the fee to which the clerk was entitled, yet the price of the license was not raised. This acted to decrease by 15 per cent the money accruing to the State from the sale of these licenses, there being but eighty-five cents received for each license sold instead of $1.00 as formerly. Out of this the State must pay the 3 per centum, postage and expressage aforementioned.

The Commission feels that the statutory costs should be more evenly apportioned between the State and the licensees. It, therefore, respectfully renews its recommendations of last year that the law be amended fixing the price of a resident hunting and trapping license at $1.25, twenty-five cents to be retained by the clerk.

Sale of Hunting and Trapping License Buttons. On January 1, 1917, there became effective a law providing that every person going afield in pursuit of wild animals in this State must have, in addition to a hunting and trapping license on his person, a button bearing a number corresponding to the number of his license. This law further provides that the button must at all times be worn in a conspicuous place on the clothing when hunting, and the failure to do so is punishable by forfeiture of license.



Pin Tails getting under way.

Passage of this law is attributable to the known fact that it was a practice with many persons who go hunting but a few times a year, usually in vacation periods, to forego the hunting and trapping license requirements. The larger number of these people now take out licenses knowing that the absence of the tell-tale button justifies the presumption they are hunting illegally. Many letters received from sportsmen complaining of having seen hunters and trappers afield without the required button have led to the apprehension and conviction of persons guilty of violating the hunting and trapping license law. To the passage of this law must go in no small measure credit for the increased sale of hunting and trapping licenses that followed in the years subsequent to 1917.

Unfortunately in the course of a year many of these buttons are lost by the licensees. This is often the result of faulty construction, but more often the result of carelessness on the part of the licensee. In the absence of a provision in the law setting forth the course to be pursued in such cases, the Commission adopted a policy of renewing lost buttons at approximate cost.

The receipts from the sale of buttons during the fiscal year ending June 30, 1921, amounted to $616.55, indicating that 4,111 persons were furnished with duplicate hunting and trapping license buttons last year.

Confiscation of Licenses. The Conservation Law provides that every person, except minors under the age of 16 years, and occupants of farm lands actually occupying and cultivating the same, going afield in pursuit of wild animals must have a huntng and trapping license on his person. The penalty for failure to meet this requirement is forfeiture of license. During the fiscal year the protectors confiscated 478 hunting and trapping licenses.

Nonresident Angling Licenses. In 1915 there was placed upon the statute books of this State a law requiring a nonresident to have a license to take fish by angling in certain waters in this State. This law provided that no person, except a bona fide resident of this State for at least thirty days prior to such taking, shall take fish by angling in any of the fresh waters under the jurisdiction of the State of New York without first procuring a license so to do. This law also carried two exceptions — a nonresident person under the age of 16 years is not required to have a license; nor does a resident of the Dominion of Canada require a license to fish in parts of the international boundary waters under the jurisdiction of the State of New York if a similar license is not exacted from residents of this State to fish in the part of such waters under the jurisdiction of the Dominion Government.

The price of a nonresident angling license is $2.50, and their sale is steadily increasing. During the past fiscal year there were 7,546 licenses sold, which netted the State $14,639.24. In the previous year the receipts from this source amounted to $11,372.28.

As with the hunting and trapping licenses, the clerk issuing the license receives a fee of fifty cents, and the clerk of the county in which the license is issued receives an additional 3 per centum, or six cents for every license issued in his county.

Spearing Licenses. The law provides that spears may be used in the taking of fish, except trout, black bass, pickerel and maskalonge, in the Niagara river between the lower steel arch bridge and the suspension bridge at Lewiston Heights at any time during the open season for such fish, provided a license so to do is first obtained. The fish most commonly taken are carp, catfish, dogfish, bullheads, mullet, suckers and eels. These species are what are known as deleterious fish, not protected by law, and recognized as being harmful to the propagation of protected game fish. The spearing of these fish in the Niagara river limits the propagation of these species to a point where they do not hold in check the multiplication of the more desirable fish. There is excellent fishing in the Niagara river for black bass, maskalonge and trout.

There were 135 spearing licenses issued during the past fiscal year. The price of a license is $1.00, and the State received from their sale $131.19.

Combined Hunting, Trapping and Angling License. There is no law in this State requiring a resident to have a license to take fish by the method of angling. There is a law requiring persons to have licenses to hunt or trap; a law requiring persons to have licenses to possess fur-bearing animals, either for exhibition, scientific or propagation purposes; a law requiring persons to have licenses to operate fish hatcheries, and fur farms, and game farms, but no law requiring licenses to take fish by angling, and this in spite of the fact that the State, at considerable expense, operates fish hatcheries in which it artificially propagates millions of fish for planting in such waters of the State as are set aside for the exclusive use of anglers.

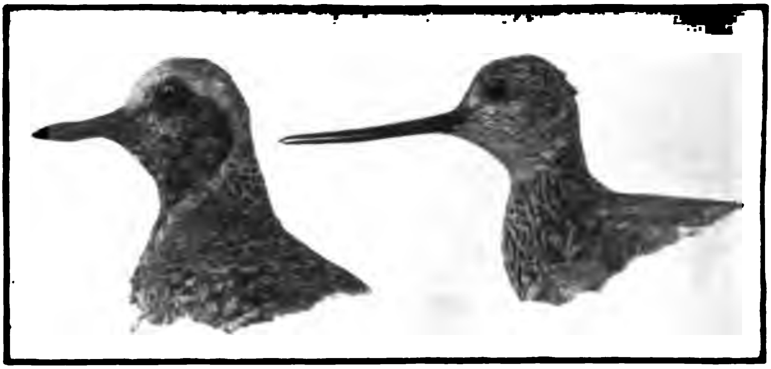
As the motorist contributes toward the upkeep of the highways; the hunter and trapper toward the stocking of the covers with game; and innumerable others for privileges of one sort or other, so, in the opinion of the Commission, should the angler in some measure contribute toward the maintenance of the State fish hatcheries.

The State operates twelve of these hatcheries, in which it annually produces millions of fish, which go to the stocking of waters to be taken by angling, and to the stocking of other waters to be taken by nets, spears and set lines. The commercial fishermen pay license fees to operate their nets, their set lines, and their spears in certain waters. Why then should not a license be required to take fish by angling, a method so persistently pursued that it takes a large part of the output of State's hatcheries to keep the streams of the State from becoming unduly depleted of fish.

The Commission feels that a license should be required to take fish by angling, and so recommends that section 185 of the Conservation Law be amended to provide for a combined hunting, trapping and angling license, carrying the same exceptions as now carried by the hunting and trapping license, the price to be $1.35, thirty-five cents of which should be retained as his fee by the clerk issuing the license.

Scientific and Exhibition Licenses. From the sale of licenses under section 159 subdivisions 1 and 2, the State received $408.00.

A license under subdivision 1 permits the holder to collect or possess fish, aquatic animals, quadrupeds, birds, birds' nests or eggs for propagation, scientific or exhibition purposes. When a license under this subdivision is applied for by a person other than an officer of a duly chartered museum or society incorporated for scientific, educational or public exhibition purposes, every means of investgation is exhausted to determine the fitness of the applicant to hold permit. Applications for this license number hundreds each year. That only sixty-three were acted upon favorably in the last fiscal year reflects the efforts of the Commission to guard against the possibility of one of the licenses falling into the hands of a person who the law did not contemplate should have one. Of the sixty-three licenses issued twenty-seven went to museums, scientific societies or officers thereof.



A study in bills — Black-breasted Plover and Greater Yellowlegs.

A license under subdivision 2 permits the holder thereof to possess any species of fish, game birds, quadrupeds or aquatic animals for propagation purposes. This license differs from that issued under subdivision 1, in that it does not authorize the holder to collect the specimens at any time in this State. The animals that are possessed under this license must be acquired in a manner not at variance with the methods set forth in the Conservation Law for the ordinary taking of them. For the most part these licenses are taken out by persons desiring to keep as a pet a wild animal taken legally during the open season, and by persons possessing ducks as decoys, which are of a species native to this State. There were 372 of these licenses issued last year, and their sale netted the State $372.00.

While the receipts from the sale of licenses under section 159, subdivisions 1 and 2 are larger by $131.00 than those of last year, the gain is in the sale of licenses under the latter subdivision. There was only one more license issued under subdivision 1 than last year.

Importation Licenses. There were 774 importation licenses issued by the Commission during the fiscal year. The sale of these licenses, at $1.00 each, netted the State $774.00, a gain of $68.00 over last year.

An importation license affords a means whereby resident sportsmen hunting or fishing in other states or countries may bring back with them the fish and game there taken when the open seasons in this State are closed. This license permits the holder to transport into this State, during the close season, nonsaleable fish and game, or fish and game for which there is no open season in this State, legally acquired and exported from the place where taken. Fish and game transported under this license, except quadrupeds which may be transported by common carrier when shipping permits are attached, must be accompanied by the license.

Licenses to Raise Fur-Bearing Animals. In 1911 there was placed upon the statute books of this State a law legalizing the breeding of skunks in captivity, under license, for commercial purposes. Subsequently the law was amended and its terms broadened so as to include all species of fur-bearing animals protected by law. This resulted in an increased demand for licenses each year until in 1920, six years after the enactment of the last amendment to the law, there were thirty-six persons engaged in operating fur farms in this State under license. This fiscal year the Commission issued fifty-five of these licenses, and received from their sale $275.00, an increase of approximately 53 per cent over last year.

Game Breeding Licenses. While the Conservation Law prohibits the sale of wild game, whether taken within or without the State, provision is made for the raising and selling of certain species under specific conditions. Elk, black and mallard ducks, deer, Canada and Hutchins geese and pheasants may be raised, provided a license under section 372 is first obtained. Game raised under this license, when killed and tagged under rules adopted by the Conservation Commission for purposes of regulation, may be sold at any time for food. The tagging of the game is done by a representative of the Commission, and a charge of five cents is made for each tag used. The price of a license under this section is $5.00, and it is effective until the 31st day of December of the year of issue. Receipts from the sale of these licenses during the past fiscal year were $685.00.

Tagging of Imported and Domestic Game. Provision is made in the Conservation Law for the importation of certain game from without the United States. The species that may be imported are pheasants, Scotch grouse, European gray-legged partridge, European red-legged partridge, Egyptian quail, and the carcasses of European red deer, fallow deer, roebuck and reindeer. Only the unplucked carcasses of birds may be imported.

As a precaution against any native game finding its way into the market, the law provides that immediately upon the importation of game, and before its sale, there shall be affixed thereto identification seals. These seals are affixed to the game by the Conservation Commission, and remain so affixed until the game is consumed. For each seal used there is a charge of five cents made.

The business of importing game was almost wiped out during the war. The receipts from this source in 1919 amounted to only $706.35. Since the termination of the war the outlook is encouraging. Receipts this year from the tagging of imported and domestic game amount to $6,207.20. This is an increase over last year of approximately 65 per cent.

Permits to Import Game for Sale. Under section 377 of the Conservation Law the Commission during the past fiscal year issued four permits, and received in payment therefor the sum of $20.00. These permits are issued to persons without the State to import certain species of game and sell the same for food. Before such permit is issued, applicant must satisfy the Commission that the game to be imported has been bred in captivity and killed and tagged under a breeding law similar in principle to the law governing such trade in this State. This is a statutory requirement, and inability to meet it is the reason for unfavorable action upon many applications.

Licenses to Possess Venison. In 1918 the number of deer reported by hunters as having been taken was 8.293. The number of licenses to possess venison after the close of the open season issued in that year numbered 378. Thus it will be seen that approximately every twenty-second person obtaining a deer took out one of these licenses. In 1919. the year when the taking of deer of either sex was legal, there were issued 833 such licenses. which. following the same process of computation, indicated there were not less than 18,326 deer killed during the open season. That this figure is conservative is borne out by data obtained from other sources.

During the fiscal year ending June 30, 1921, there were issued 546 of these licenses. Using the same ratio that was used in computing the years of 1918 and 1919, there were approximately 12.000 deer taken during the last open season. As the deer supply of the State is estimated to be about 50.000, the number taken last year is 24 per cent of the herd, which is about the maximum drain it is capable of standing without becoming endangered.

These figures, if serving no other purpose. reflect the wisdom of the repeal of the law permitting the taking of deer of either sex, and of the passage of the law limiting the taking of but one deer having horns not less than three inches in length.

Receipts from the sale of these licenses amount to $546.00.

TROUT HATCHERIES

There are twenty-five hatcheries devoted to the artificial propagation of trout under permits issued pursuant to section 371 of the Conservation Law. While no fee is charged, before a permit is issued applicant must satisfy the Commission that he has facilities for the propagating of this species of fish that come within the intent of the law. A permit allows the raising of these fish throughout the year, and the sale or exchange at any season for purposes of propagation or exhibition. If trout are to be disposed of for consumption, they must first be tagged with an indestructible tag, placed on the tail of each fish with a machine supplied for such purpose. Machines are furnished by the Commission with the understanding that title thereto shall remain in the State. A rental, the actual cost of manufacturing the machine, is made for the first year, and an annual rental of one dollar thereafter. A charge of one cent each is made for tags. From the sale of trout tags during the fiscal year the State received $1,890.00 — $148.00 more than was received from this source last year. Rentals of tagging machines amounted to $200.00.

GAME FARMS

Nearly fourteen years have elapsed since the Conservation Commission purchased land at Sherburne, N. Y., to be used as a game farm for the raising of pheasants for introduction into the covers of this State.

The first year there were distributed but eight hundred birds and five thousand eggs. While the output was not very large, a world of experience was gained, and from that time the output has steadily increased each year.

Subsequently two additional farms were established — one at Brownville, Jefferson county, and one at Middle Island, Long Island.

One of the impressive things about these farms is their intensive yet very efficient arrangement. Over three thousand adult birds are wintered. About twenty thousand young pheasants are hatched and brooded each season. With the exception of about twenty-five hundred, which are grown to maturity to be used as breeders, the young chicks are distributed at the average age of twelve weeks.

In addition to chick pheasants, each spring there are distributed approximately one hundred thousand eggs.

Pheasants and pheasant eggs are gratuitously furnished upon application to any resident of the State. The birds are furnished with the understanding that they will be liberated in covers suitable to their habits; and the eggs with the understanding that the applicant has facilities for hatching and that the chicks hatched when of an age that will permit of liberation with reasonable safety will be turned loose in such covers.

Large numbers of chickens are also raised on the farms. While the pheasants are raised in the open and under conditions as nearly as possible paralleling those they will find in the covers of the State when liberated, the chicks have large ranges with long multiple-unit houses. The hens serve a double purpose. They not only furnish incubation for the hatching out of the pheasant eggs, but they provide the major part of the first three or four weeks' food of the young birds. During the first two weeks the diet of a chick pheasant consists principally of hard-boiled eggs worked through a meat chopper and mixed with equal parts of milk mash and grains and charcoal. Too, when young pheasants are sent out from the farms they are accompanied by their foster parent. When received by the applicant they are promptly taken to suitable covers and liberated. The hen will there provide for them and guard against their natural enemies until chicks are of a size large enough to fly, when they will take up their abode in a nearby thicket, thereafter shifting for themselves.

Deadly enemies of young game birds — Great Horned Owls caught poaching.

In addition to pheasants and chickens, many other different species of wild life find asylum on the game farms, although not a few are unwelcome. In spite of every precaution to prevent vermin from becoming established on the farms, frequently a fox, weasel, mink, hawk or predatory cat finds its way to the bird pens and works havoc.

Sportsmen, farmers and others interested in conservation or game raising are always welcome. Along the roads leading to the game farms are signboards conspicuously placed bidding welcome and inviting visitors. The people that accept this invitation number thousands each year.

Green food forms an essential part of the diet of pheasants, and all such food required is raised. Oats, hay and other fodder, peas, corn, carrots and turnips are grown. This does not interfere with bird raising, but is rather a help to it. The pheasants are permitted to run at large over these fields and here find the insect life that forms so essential a part of their diet. No spraying for the killing of insects or larvae is required on the game farms or adjacent farms; the birds attend to this.

The most successful year of the farms was that ending June 30, 1921. Six hundred and fifty applications were received for pheasants, and all were filled, 11,377 birds being distributed, all large, well-developed, active pheasants. The number of birds sent out from the farms is larger by 15 per cent than the number distributed last year.

There were also eleven hundred and eighteen applications received for pheasant eggs. These applications were filled in the order received, and as promptly as eggs became available. The eggs distributed totalled 103,300, an increase over the output of last year of 12 per cent.

The Commission continued its policy of furnishing eggs to fish and game clubs interested in stocking the State's covers with pheasants. A few of the clubs reported having raised as high as three thousand birds. Returns on the whole were very gratifying and all told of uniform success.

Accompanying each shipment of birds and eggs is a booklet containing instructions for handling. The book is profusely illustrated, containing cuts of every important phase of the work. That these directions serve their purpose is manifest from the reports of persons to whom eggs and birds have been furnished telling of their success.

Indicative of the efficiency with which every detail in connection with the distribution of birds and eggs from the game farms is handled, and of the hearty co-operation received from the transportation companies to insure proper routing and safe and prompt deliveries, is the small amount of claims yearly paid to the State for lost birds and eggs. Claims paid last year amounted to but $75.00.

Returns of the game killed covering thirty-one of the State's sixty-two counties have been tabulated and thus far show that there were 35,000 pheasants killed during the open season of 1919. Full returns will undoubtedly show upwards of 75,000 pheasants having been taken. The pheasant is a bird of comparatively recent introduction, the first stock to be placed in the covers of the State being raised on the State game farm at Sherburne, N. Y., less than fourteen years ago. That it is now thoroughly acclimated is more apparent each year as reports covering the birds are received. In 1918, 34,000 pheasants were taken; in 1919, reports covering one-half the State show 35,000 as having been taken; and it is safe to say, basing an estimate on observations made by protectors, reports of 1920 will indicate that there were in excess of 100,000 taken. Under the present law only the male pheasant may be killed, and then only during the last two Thursdays in October and the first two Saturdays in November. Only three pheasants may be taken in the open season. With the game farms maintaining their present yearly output, and the birds continuing to freely propagate in the wild, in a few years there undoubtedly will be in the covers of the State pheasants sufficient in number to permit of a longer open season and liberal bag limit without endangering their chances of becoming permanently established.

BUREAU OF INLAND FISHERIES

The Bureau of Inland Fisheries issued during the calendar year ending December 31, 1921, 7,070 net licenses, and collected as fees during the fiscal year ending June 30, 1921, for the issuing of such licenses, $27,564.21, indicating the average fee received by the State for each license to be about $3.90. The total receipts are $524.48 less than collections of the preceding year. This falling off is due to the Commission cancelling all licenses for nets to be used in Seneca, Cayuga and Owasco lakes. At the time the Commission concluded to revoke all net licenses in these waters there were being operated therein twenty-nine seines and traps, the license fees for which aggregated $860.60. It will thus be seen that the deficiency in license fees this year is not due to any lack of demand for licenses but to the closing of certain waters to the use of nets.

The use of nets below Verplanck's Point and a few miles above the point, and the taking of shad before they are ready to spawn, is one of the causes of the great loss in reproduction. The steamboats which ply the river disturb the spawning beds, especially in shallow parts where the shad are in the habit of casting their spawn. Shad begin to spawn a short distance below Crum Elbow, between Hyde Park on the east and West Park on the west. The favorite spawning place is near Esopus light and along the west shore of the river and on Esopus Meadows. Another favorite spot is Kingston Middle Grounds, extending from Kingston light to Turkey Point, and known as "The Flats." It is claimed that more shad spawn here than in all the rest of the river. Practically no shad are caught above Catskill. The shad do not frequent the creeks flowing into the Hudson river, but deposit their spawn in the river.

From the pound net there is no escape.

The Commission made a reservation under which nets should not be used during the shad season from the buoy at Kingston Point to one opposite the village of Barrytown. A further reservation should be made if the supply of shad in the Hudson river is to be maintained at a fair standard. This would call for extending the time during which nets may be used an additional twenty-four hours. The law now requires nets to be removed after sunset Friday night and not reset until an hour before sunrise on the following Monday morning. If this were extended so that it would cover the period from Friday night until an hour before sunrise on Tuesday, it would have a decidedly beneficial effect in permitting the shad to reach their spawning grounds.

Report of Fish Taken. In the aggregate of all kinds, the fish taken during the calendar year, as reported by the licensed fishermen, totalled 4,787,403 pounds for which there was received $567,493.16, an average price per pound of approximately 12 cents.

There were 2,448 persons licensed to use nets this year, and the figures here shown are the fish taken and prices received by them. They do not include the fish taken by persons licensed to use set lines. Holders of set-line licenses are not required to make a report of the fish taken, but it is estimated that each set line will, in the course of a year, take fish to the value of $5.00. To the above, therefore, should be added the value of the product of 4,624 set lines, $23,120, making the total value of the fish taken from the waters of New York State $590,613.16.

As against this the fishermen paid to the State of New York in license fees for the privilege of operating nets in the waters of the State a sum equivalent to about 4 per cent of the value of the fish reported taken.

Set Lines. There were 4,624 licenses for set lines issued during the year of 1920. The fee for a set line is $1.00; and there was received from their sale $4,624. The fish that may be taken on a set line are bullheads, catfish, eels, perch, sunfish, carp, mullet and dogfish, these being classed as coarse fish and recognized, particularly the carp and bullheads, as harmful to the propagation of other fish. They are for the most part prolific breeders and the taking of them in large numbers does not act to endanger their continuance in the waters of the State but to hold them within reasonable bounds. Set lines are not permitted in trout waters; the waters in which they may be used are specified by the Commission and the seasons for their use fixed.

Hudson River Fisheries. The fisheries of the Hudson river during the year ending December 31, 1920, yielded 788,556 pounds of fish. In this catch were included nearly all edible species. The largest catches were of shad, carp, herring, suckers and eels. While the total catch was smaller by about 36,000 pounds than it was in the preceding year, the falling off was due to the failure of the shad to return to the river in their usual numbers, the catch being about 45 per cent less than that of a year ago. Though there was a falling off in the number of pounds of shad taken, there were appreciable gains over other years in catches of most species. The most notable gains occurred in the catches of carp, herring, bullheads and perch.

The strong market of 1919 for the fish of the Hudson river continued throughout the year of 1920, prices averaging a trifle higher for most species. The average price received per pound for fish in 1920 was sixteen cents as against fifteen cents the preceding year. These figures are not estimated but are compiled from returns made to the Commission by the fishermen as being actual pounds of fish taken and prices received.

Fisheries of Sodus and Fair Haven Bays and Adjacent Waters. The licensed fishermen operating in Sodus Bay, Fair Haven Bay and adjacent waters in which the use of nets is legalized took from such waters during the calendar year ending December 31, 1920, 323,362 pounds of fish, and received from its sale, according to reports made to the Commission, $32,885.00, an average of about ten cents per pound. The catch of fish in these waters during the period here covered is larger by 83 per cent than the catch of the previous year. Only a few species of fish are taken in these waters, the most prominent being the ciscoe, of which the yield totalled 283,542 pounds. The other species obtained were the carp, bullhead, dogfish, eel and sucker. Of the last named fish there were taken but 775 pounds.

Shad. The shad is one of the most valuable of food fishes, its flesh, although very bony, being delicious. It occurs along the entire Atlantic coast and makes its appearance in the Hudson during the latter days of April, ascending the river to spawn. Nets are licensed to take shad between March 15th and June 15th. Once present in the Hudson by hundreds of thousands, the catches of recent years have been steadily diminishing. In the year 1915 it reached its lowest level, but 24,209 pounds being reported. In the years following the catches showed a gradual increase, until in 1919 the catch was larger than the aggregate of the ten preceding years. In 1920 there was a falling off of 45 per cent, 140,177 pounds being reported.

Herring. The catches of herring reported by the licensed fishermen totalled 101,850 pounds, 27,700 pounds more than reported last year. The herring is one of the most important food fishes taken from the waters of this State. Great quantities of them are each year preserved by smoking, salting or canning. The young are often canned and sold as sardines.

BUREAU OF FISH CULTURE

With the exception of some seasonal difficulties with which the hatcheries of the Commission have had to contend, the fish cultural work of the Commission has been successfully conducted during the past year. A spirit of earnest cooperation and friendly rivalry is manifested by both foremen and employees at the stations in an endeavor to equal or surpass the records of previous seasons of fish distribution. The early spawning of the pikeperch at Oneida lake, because of unusually warm weather in April, and their failure, because of this condition, to run up the affluents of the lakes, accounts for the comparatively small distribution of this species during the year. This, of course, was unavoidable and goes to prove that the weather is an important factor in determining the results of fish cultural operations.

Hatchery troughs do the work of a flowing stream.

Very effective work has been done in stocking the inland waters of the State and full appreciation has been shown by the fishermen. It has been the aim of the Commission to conduct its system of hatcheries on a strictly business basis. Accurate records of the distributions are kept not only in the office of the Commission, but at the hatcheries from which the fish come. Temperature records, previous stockings and general suitability of the lakes or streams to the fish applied for are a few of the details which are considered before fish are delivered to applicants.

The necessity for the practice of strict economy is reiterated to every employee of the Commission whose duties form part of the work of fish culture.

The foremen and skilled laborers at the hatcheries are receiving compensation which, in private business affairs, would not be considered adequate for some of the services performed.

As far as appropriations will permit, trucks are being used to deliver fish. Because these trucks can reach certain localities by direct route in a shorter period of time than it would take the railroads, young fish life is preserved and economy of time, effort and expense effected.

A plan of general permanent repairs to hatcheries has been adopted which will minimize construction expense, and, with the assistance of the railroads in the matter of free transportation, a considerable saving may be recorded.

Probably a better appreciation of the methods of conducting operations at the various fish hatcheries of the State might be obtained by an inspection of the stations. The actual work could be observed, the improvements made and needed could be noted, and personal talks with the foremen on the ground would be productive of much useful information relative to increasing both the output and efficiency of the hatcheries. To this end the Bureau of Fish Culture cordially invites legislative inspection of its hatchery plants, confident that those who grant appropriations for the propagation and distribution of fish to public waters will agree that the money has been wisely and economically expended in the public interest.

Transporting Fish. Not the least of the problems which confront the man engaged in fish cultural operations is that of the transportation of his hatchery product. Poor connections on the railroads have been a serious contributory cause of fish mortality. At one of the State hatcheries, it has been necessary to make a twenty-four-hour trip by steam railroad in a circuitous way in order to reach a destination but thirty miles from the station. This trip, of course, involves long waits at junction points and, necessarily, the constant attendance of a messenger in order that the fish may be kept alive.

With the improved condition of the highways of New York State, the use of suitable delivery trucks seems to afford a remedy. A truck capable of carrying from 60 to 70 forty-quart cans at the Cold Spring Harbor Hatchery, on Long Island, would save the cost of railroad car transportation, the delay incident to the passage of the fish car "Adirondack" from Long Island to New York city and return by float, and in every instance much valuable time which is now lost, and which not only endangers the young fish but causes no little expense to the State.

Stocking Policy. The maintenance of a stocking policy for the waters of the State is of primary importance. To establish such a policy, so far as appropriations by the Legislature would permit, water surveys by scientists have been made. These surveys have been of value in determining the proper inhabitants of lakes and streams. The results of previous stockings by the Commission and a knowledge of the kinds of fish in the waters have been of great aid in the general stocking of waters where a survey has not been made. Too much cannot be said against the mixing of inharmonious species. The evil results of this ill-advised policy are apparent every day, particularly in the increase of the brown trout in waters where the brook trout once held sway. The brook and brown are the most conflicting of the trouts, and, when once the larger brown trout has become established in a stream, it becomes a mere question of time until it becomes dominant, and finally of the total extinction of its smaller and more delicate competitor.

Instructions as to planting and warnings against the placing of brown trout in waters which are inhabited by the brook trout are sent broadcast throughout the State in an effort to impress upon citizens the care which should be taken to keep apart fish which are likely to prey one upon the other. These instructions also contain information relative to species other than trout, as to the care of fish en route from the railroad stations to the waters to be stocked, and as to the necessity of safeguarding waters inhabited by trout from possible invasion by spiney-rayed fishes through planting in communicating waters. Instructions are also given to applicants as to the proper method of planting fry and fingerlings so that better results may be obtained.

Physical Condition of Hatcheries. The general physical condition of the hatcheries is the best in many years, and this condition is uniform. In the interest of economy and betterment, it has been decided that all future repairs to the hatcheries and equipment shall be of a permanent nature, and that as fast as wood structures show signs of needing repairs they are to be replaced by concrete. This has been done recently in several instances and the cost has not been significant, when it is considered that the improvements greatly facilitate the work, that they are durable, and will not require constant attention and intermittent expense.

Railroad Transportation. During the past year a great contribution to the success of the Bureau of Fish Culture in stocking the waters of the State has been the valuable aid extended by a large majority of the railroads. At a time when the policy was for the strictest economy, these companies gave free transportation to our messengers when carrying young fish along their lines. It may be argued that the companies benefit by the planting of young fish in the vicinity of their rails, that good fishing attracts the sportsmen to patronage of the roads, and that the advantage to the railroads and to the Commission is mutual. The Bureau of Fish Culture prefers to regard this courtesy as an evidence of appreciation of its efforts to stock depleted waters, and as a public-spirited cooperation which is deserving of and has appreciation.

Courtesy. The Bureau of Fish Culture acknowledges with pleasure the valuable cooperation of the United States Bureau of Fisheries. Eggs of land-locked salmon, steelhead and lake trout were received in generous quantities through the courtesy of the United States Bureau. When the fish were developed to the fingerling stage, they were planted in suitable waters of the State. The National Commissioner of Fisheries has evinced a very friendly interest in the work of the Conservation Commission, which has met with cordial appreciation.

Adirondack Hatchery. The work at this station for the fiscal year has been along the usual lines of fish propagation. Landlocked salmon, brook trout, brown trout, rainbow trout and lake trout, together with whitefish in large numbers, and a small number of maskalonge shipped from the Chautauqua Hatchery, were hatched and distributed to applicants. It was the foreman's first attempt at hatching maskalonge at this station. He reported that a fairly good percentage hatched, but that they did not appear to it lively. The water is probably too cold for the successful propagation of this species.

The greater number of brook trout eggs came from commercial hatcheries, and by following the custom of recent years of sending a messenger for them, the loss in transportation was small. The hatchery had in all a total of 1,830,935 brook trout eggs, including those taken in local waters, as well as those received from commercial hatcheries. The percentage of hatch from the eggs was very good, and no serious loss has been experienced in the fry or fingerlings. Because of the coldness of the water at the Adirondack Hatchery in the early spring, the fish grow slowly until about June 1st; but from that time on their growth is very rapid. Some specimens which were kept in an aquarium until they were a year old attained a length of five to six inches.

Since July 1, 1920, this station has distributed 1,556,358 brook trout fry and fingerlings, 134,330 lake trout, 26,872 rainbow trout, 42,775 brown trout, 51,941 landlocked salmon, 6,174,000 whitefish, and 290,000 maskalonge; 13,348,000 whitefish eggs were taken from local waters, and of this number 6,132,000 eggs were shipped to other hatcheries of the State.

The greater part of the fish distribution has been done with the big aviation truck in use at the station. It is possible to put 40 to 45 cans of fish on this truck, and to unload them along the road to various applicants. A distance of 150 miles can be covered in one day, whereas, if the attempt to deliver the fish by train were made, it would take two or three days.

When delivered by truck, the fish are in much better condition than when they are sent by railroad. The truck is a great aid to distribution at this station.

Many repairs and improvements have been made to the grounds and buildings. A new wagon shed containing a garage for the truck has been built, and a new porch on the cottage adds much to the appearance and comfort of the place. It is planned to build a new set of concrete rearing races at the rear of the hatchery. These will be supplied with water from the hatchery after the water has been used in the troughs inside the building. This will not only increase the rearing facilities, but will give additional space much needed to prevent overcrowding in other races, and will enable us to keep many of the fishes until they are larger before shipping.

Cleaning fish for cold storage.

It is hoped that some plan may be devised in the near future wherein the abundant supply of spring water, which is in the swamp adjoining the lawns, can be used. The station could then have the benefit of this cold water, both in the outdoor races and in the hatchery building.

Bath Hatchery. While the work at this station has been very satisfactory, and the number of fish distributed large, the output could be materially increased by arranging hatching troughs so that the water could be used a second time in rearing tanks outside of the hatchery buildings after it comes from the troughs inside.

It is planned to replace the Ford truck now in use at the hatchery by a larger truck having a capacity of sixty forty-quart cans. This will materially aid in the distribution of fish and satisfy a need to which the foreman has frequently called attention.

During the year a steam-heating plant was installed in the hatchery building and has given much satisfaction.

A wooden flume extending from the fountain to the hatchery, a distance of about 800 feet, was built for experimental purposes, and has proved a distinct success in aerating the water. Heretofore this station had been troubled with diseases which resulted in considerable losses of fish. By the use of the flume for aeration purposes, the difficulty has been eliminated. It is recommended that an appropriation be asked from the Legislature for a new concrete flume to replace the present one.

Caledonia Hatchery. A very successful year was experienced at the Caledonia hatchery, substantial increases having been made in the collection of brown and rainbow trout eggs. The stock fish are reported to be in fine condition and many eggs should be collected this fall. Owing to the increased demand for brown trout, it is suggested that more eggs of this species be kept at the station in future, especially as the fish do exceptionally well there. The lake trout were not planted as fry, and the foreman reported that on July first nearly all were feeding and should develop into a fine lot of fingerlings. Good success was had with the whitefish and herring, and on account of the mild winter the eggs hatched early. Good pikeperch eggs were received from the Oneida hatchery at Constantia; but those shipped from Michigan died in transit. About June first the station received 200,000 steelhead trout eggs from the United States Bureau of Fisheries and, on the first of July, the fry were ready to take food and should be ready for distribution by the time the other fish at the hatchery have been planted.

Last fall Spring creek was deepened from the springs to the tracks of the Lehigh Valley Railroad, and there is now very little water in the old mill pond. This is a great improvement over conditions in former years.

New comfort stations have been built on the grounds for the use of visitors, and new tables constructed and placed in the grove. These are much needed improvements. At the foreman's residence a bath was put in, the water being pumped by electric motors.

A new heater should be installed at this station, as the old one is burned out and cannot be used.

Chautauqua Hatchery. After the close of the fiscal year (July 1, 1920) this station distributed over 250,000 brook trout fingerlings, and this ended the output of a successful season. When the stock at the hatchery had been planted, the foreman and two employees were assigned to look after the exhibits of fish at the Rochester Exposition and the State Fair at Syracuse. The foreman also supervised the operations of the field station at Sodus Point during the month of November.

Aside from the general routine of repairs several improvements were made at the station, the most important of which was the painting of the hatchery buildings.

In July and August of 1920 an exhibition of fish was made at the station which attracted much favorable comment from many visitors.

Owing to an early season, the maskalonge work commenced two weeks before there is record of any such previous start at this station. The spawning season was short but successful.

On May 10th, as soon as the maskalonge work was finished, the distribution of the brook trout was commenced, and this is being continued at the close of the fiscal year. A large portion of the distribution from the hatchery has been done by baggage shipments. The railroad people have been uniformly courteous in assisting the messengers to reach their destinations as soon as possible. The local railroad, the Jamestown, Westfield and Northwestern, furnished transportation for fish and messengers, but as this is a trolley railroad and the baggage cars are limited, the main shipping outlets have been at Westfield and Jamestown which are now reached by truck. It has been possible to ship from Westfield and Jamestown by using the hatchery truck, which has been of very material aid, and which would be greatly missed in the work of the station. By using the truck quick connections were made, and these fast connections greatly conserved the fish.

Cold Spring Harbor. Aside from the general routine of work many repairs and improvements have been made at this station. The employees made whatever repairs were needed to the buildings and ponds and mended the screens wherever necessary. A hatching table which has been in use since the hatchery was built was replaced by a modern battery giving double the jar capacity of the table and thus increasing the output of the hatchery.

In November the trout at this station began to spawn and eggs were collected almost every day. In this month the collections from stock trout were 685,400 brook trout; 294,460 brown trout and 104,400 rainbow trout eggs. Mr. William M. Keil, superintendent, Tuxedo Park, contributed 200,000 green brook trout eggs, for which he was to receive equal value in smelt eggs if the hatchery was successful in the collection of these eggs. In December our stock trout were still spawning and we collected 28,800 brook trout eggs, 14,790 brown trout eggs and 226,800 rainbow trout eggs. A supply of the rainbow and brown trout eggs was furnished to the Adirondack, Bath and Delaware hatcheries. During the latter part of this month the tomcod commenced spawning and the collection of eggs on Shinnecock bay was 69,750,000. In January the tomcod work was at its height, but with the warm weather and high temperature of the water, the eggs were not as good as they would have been with the water at the freezing point. The month's collection of tomcod eggs was 494 quarts or 185,250,000, which filled all of our hatching jars.

During the months of January and February the station hatched and planted 171,000,000 tomcod fry and delivered the greater portion of them with a Ford motor truck.

Five Brook Trout, six pounds, one ounce, Croton River, April 17, 1921.

The creek was cleared of grass and made ready for the annual spawning function of the smelt in such a way as to make the collection of eggs easier. The foreman has to watch these fish carefully as, in some seasons, their spawning will vary a month or more. During February the foreman made several trips to the east end of Long Island making notes on the winter flatfish and watching the condition of the spawn so as to begin collecting as soon as the fish were ready to deposit their eggs. Late in February a few ripe fish were found; but by the first of March they were coming fast.

All of the month of March was spent with the fishermen taking the eggs of the flatfish which would otherwise have been lost in the fish box when sent to the city market. Eighty-seven million eggs were collected and 66,000,000 fry were planted in Long Island waters.

About the first of April there was a big run of smelt, but the fish were small. Later on it was found that the fish were spawning along the sandy shores where the fresh water runs out of the many flowing wells forming small creeks down to the tidewater. One hundred forty-five million smelt eggs were collected.

Early in April the foreman received from the Constantia hatchery 750,000 eyed pikeperch eggs in fine condition. These were hatched and delivered to applicants on Long Island.

By the last of January the troughs were full of trout fry, some of them feeding, and the planting of trout fingerlings began on Long Island in the fore part of April. The fish were from two to two and one-half inches long.

Eleven million one hundred thirty thousand lobster fry were planted by this station in Fort Pond bay during the month of June.

Reports were received from fishermen that the fishing is very good in most of the waters. During the spring at Hook creek and the Rockaways, the flatfish and tomcod were plentiful — boats with one man catching 50 to 60 flatfish and as many as 150 tomcod. The fishing for flatfish with trawls was formerly confined to the eastern waters of Long Island, but last spring the fishermen worked to nearly the length of the sound.

During June a new roof was put on the engine house, the buildings painted and other necessary repairs made.

Delaware Hatchery. Successful results attended the work at the Delaware hatchery during the past fiscal year.

In addition to the regular distribution to applicants, 100,000 brook trout fry were sent to the Summitville field station for further cultivation and distribution to waters in the vicinity.

The replacement of a few troughs in the hatchery building, repairing the hatchery floor races and sluiceways, painting the buildings, etc., are improvements recommended and should be made.

Dunkirk Hatchery. This hatchery is one of the largest of its kind on the Great Lakes and fishermen report that since it has been in active operation fishing has been greatly improved — notably so during the present year.

In addition to the regular output of the station 29,796,000 eyed herring eggs were sent to the United States hatchery at Cape Vincent for distribution by the United States Bureau of Fisheries.

A four-inch water main, which can be used in case of emergency, was laid into the hatchery. This main was given a trial last winter, and it was found that the chlorine used did not affect the eggs, which hatched out about three weeks earlier than the eggs in the lake water.

New gutters were laid around all the drives and the roads resurfaced with crushed stone; but a gutter or curb should be put on the opposite side of the driveways. This would improve the appearance of the grounds.

Eavetroughs and conductor pipes were put on the cottage and a new garage built.

The buildings have been newly painted and the lawns graded and seeded.

Fulton Chain. When water conditions are considered, the output of fish from this hatchery during the past year has been fairly large. The water which is taken from the Old Forge pond becomes very warm in the early spring, and the land locked salmon is the only fish that can be successfully raised to a large fingerling stage in the hatchery troughs.

During the fiscal year considerable repairing has been done to the hatchery. A new cement floor has been laid and twenty-eight cement troughs have been installed. These troughs have given complete satisfaction, and because of their smooth surface are much easier to keep clean. Owing to the cold weather and the arrival of eggs at the hatchery during the winter, it was necessary to delay putting in the new head troughs, but the Commission expects to replace the wooden headed troughs with concrete ones, and these, when completed, will eliminate the cost of repairs.

Temporary troughs have been erected on the plot of land recently purchased from the Thistlethwaite estate, and brook trout are being reared there. If the water supply proves to be suitable, it is planned to construct permanent races at this place, thereby increasing the output of brook trout fingerlings by at least 25 per cent.

Linlithgo. The output of this hatchery varies from year to year according to the number of applications to be filled. The only eggs collected by the hatchery force are from the shad, the others being transferred from various stations.

The shad season was short and the weather conditions unfavorable, so that only 703,125 fry were hatched, and these were planted in the Hudson river in the vicinity of Rhinecliff and Kingston.

No extensive repairs were carried on, and when the work became slack th men were transferred to other stations to assist in the work at those plac

Oneida Hatchery. The regular work of propagating brook trout, pikeperch smallmouth black bass and yellow perch was carried on at this station, a as the distribution report shows, the work was a success, although the pi

Fourteen Brook Trout, weight seventeen pounds, caught in the west branch of the Croton River, May 22, 1921.

perch egg collection was unsatisfactory because of weather conditions. T warm weather in early spring brought the pikeperch up Scriba creek, bu a sudden falling off in temperature caused them to return to the lake t spawn where our men could not reach them, and only 205 quarts of egg were taken. Of these 50 quarts were shipped to Caledonia, 50 quarts t Linlithgo and five quarts to Cold Spring harbor, leaving 100 quarts at the hatchery, which produced 12,750,000 fry. These were distributed to applicants in the immediate vicinity of the hatchery.

Three hundred seventy-six thousand brook trout fry and fingerlings were distributed to adjacent waters.

Five hundred thirty-four smallmouth brood bass were obtained and placed in six of the hatchery ponds. From this stock 417 cans of fry, representing 338,000 young fish were shipped to applicants; 50,000 fry were planted on the south shore of Oneida lake at Chittenango creek and 136,000 fry were planted at Long, Little and Wantree islands. At points on the north shore of the lake from Clough's point to Dakin's bay and points west to Philip's point, 54,000 fry were planted. Around Dakin's shallows 27,000 fry were planted and 50,000 were sent to the canal ponds at Fort Hunter to be reared to the fingerling size, making a total of 655,000 black bass fry distributed from this station.

The boat house and marine railway were completed during the past fiscal year. The boat house is a frame building 30 feet by 70 feet and is two stories in height. The first floor is used for storing the boats of the hatchery and the boat used by the game protective force. The second floor is used for storing nets and making general repairs. The boat house and marine railway fill a long felt want at this station.

St. Lawrence Hatchery. The total number of fish distributed at this station during the fiscal year was 22,223,697.

The catch of pikeperch during the spring was not as large as usual. This was no doubt due to the peculiar weather experienced at the time the fish were spawning. About 100 quarts of pikeperch eggs were taken at the field station at Pope's Mills. The station employees were handicapped to a large extent in taking these eggs by muskrats cutting holes in the nets and liberating fish which were held to ripen. About 100 quarts of eggs were also taken at Ogdensburg. This made up a total of about 25,000,000 pikeperch eggs taken, and from this number about 17,200,000 fry were hatched and planted — 3,000,000 being hatched at Pope's Mills and planted in the stream where the spawn was collected.

Five million yellow perch eggs were sent to the rearing ponds on the canals for further propagation and distribution.

One hundred eighty-seven fingerling maskalonge, ranging from 6 to 10 inches in length, were liberated in the St. Lawrence river.

Twenty-three thousand five hundred ten fingerling small-mouth black bass were planted in public waters of northern New York. The bass started to run the first week in May and by the twelfth of that month the ponds were stocked with brood fish, the majority having nested. About that time cold, freezing weather set in and a large part of the eggs were killed by the great change in temperature. The pumps were kept running to hold the water as nearly normal as possible, but the change was too great to save the eggs. This necessitated the catching of a new supply of brood fish by the foreman, 125 being taken. These fish hatched well. The prospects for a banner season in the beginning of May were very bright; but hindered as the work has been, an estimate on July 1st showed 100,000 fingerlings three-fourths of an inch long in one pond alone.

During the fiscal year the water mains were dug up and caulked and the rip-rap work pointed up. The sides of the ponds, where washed out, were filled and the penstocks repaired. The room back of the barn was converted into a garage by having double doors cut in, new windows installed and the necessary cement work, truss and braces put in to make a safe and substantial room for storing the truck and other machinery. The carriage room was also ceiled and harness closets built in, the stable ceiled and a new floor laid. All of this work was performed by the hatchery force without extra expense for labor.

With reference to the continuation of pikeperch work at this station in 1922, the foreman recomends that another type of hatching jar be used, as he finds that a jar having a rounder bottom hatches a better percentage of eggs than the one now in use.

If it should be decided to continue the pikeperch work at this station in future, it is recommended that an additional building be constructed, and that a battery with a capacity of about 200 jars be installed. At the present time the hatching work is carried on in the pumphouse; but owing to a lack of space the work is done under difficulties.

Warrensburg Hatchery. During the past fiscal year two concrete tanks were built at this station, thus increasing the capacity of the hatchery by 100,000 fingerling fish. The grading around the ponds and buildings was finished and all the tile was laid from the new concrete tanks to the main drain tile. Tile was also laid and graded in the pine grove at the rear of the hatchery. A new truck with a carrying capacity of sixty forty-quart cans, has been assigned to this station. Some of the applicants who get their fish from this hatchery live long distances from the railroads and others have to take their fish long distances from the railroad stations to the waters in which they are to be planted. With these trucks it has been possible to deliver the fish at the homes of applicants and, in some cases, directly to the waters applied for, thereby getting the fish to their final destination in better condition than heretofore.

Summitville Field Station. This station has fulfilled its purpose, which was to supply fish for a zone that could not be reached except after a long journey. Brook trout fingerlings of two to three inches in length have been delivered to applicants in this section, which comprises portions of Ulster, Orange and Sullivan counties. Much of the distribution work has been done with a small Ford truck, although many applicants have called at the station for their fish. The fish were delivered at this station as fry by other hatcheries of the Commission because they could not be reared to the fingerling stage on account of congested conditions at the parent station. The field station was in operation this year from April until the middle of August, and the total cost for operating during this period was only $1,140.50. The value of the fingerling fish produced— based upon prices asked by commercial hatcheries — was in the neighborhood of $23,000.

Canal Ponds. The canal ponds yielded the following fish as a result of the season's cultivation:

100	Small mouth black bass fingerlings.
3,470	large mouth black bass fingerlings.
4,000	bullhead fingerlings.

There were left in the ponds as brood fish

254	large mouth black bass.
30	small mouth black bass.
427	bullheads.

The fish distributed to applicants ranged in length from 4 to 6 inches, and were probably the largest of their species ever put out by the State from any of its hatcheries. They were in splendid condition and greatly pleased their recipients.

In 1920 the production of fish from these ponds totaled 38,420. This included small and large-mouth bass, bullheads and yellow perch. The output for 1921 compares well with that of last year when the size of the fish taken from the ponds is considered. The cannibalistic habits of the species cultivated will account for the diminished number planted this year; but fish culturists will agree that the loss from this cause is not comparable to that experienced by many hatcheries where attempts are made to raise these species to the large fingerling stage. In 1920 the fish were removed from the ponds in July while this year the distribution was completed in September.

ACTIONS BROUGHT, PENALTIES AND JUDGMENTS RECOVERED

Summary by Divisions, July 1, 1920, to June 30, 1921

	Actions	Recoveries
Metropolitan and Long Island Division. (Claude Hanlon, Inspector)	940	$15,630 50
Central New York Division. (Wm. H. Weston, Inspector)	485	9,657 00
Allegany Division. (R. L. Witherell, Inspector)	399	8,185 00
Western Division. (F. W. Hamilton, Inspector)	359	7,781 10
Southern Division. (S. B. Slatter, Inspector)	303	5,162 70
Ontario Division. (J. A. Colloton, Inspector)	302	5,538 84
Hudson Division. (J. M. DeSilva, Inspector)	263	4,683 50
Southern Adirondack Division. (C. E. Underhill, Inspector)	240	6,104 00
Eastern Division. (C. A. Johnston, Inspector)	237	6,035 70
St. Lawrence Division. (M. L. Brackett, Inspector)	231	5.353 65
Northern Adirondack Division. (R. L. Burmaster, Inspector)	205	5,210 75
Eastern Adirondack Division. (R. B. Nichols, Inspector)	192	2,957 50
	4 156	$82,499 74

Number of Cases Reported and Disposition of Actions

	Fined or settled	Licenses forfeited	Sentence suspended	Jail	Investigations, acquittals and cancellations
Metropolitan and Long Island division	756	128	51	2	3
Central New York division	437	36	6	......	6
Allegany division	353	32	6	......	8
Western division	277	73	....	......	9
Southern division	253	40	4	......	6
Ontario division	263	28	8	1	2
Hudson division	237	23	2	......	1
Southern Adirondack division	205	22	5	......	8
Eastern division	185	46	4	......	2
St. Lawrence division	208	15	3	......	5
Northern Adirondack division	172	17	5	......	11
Eastern Adirondack division	166	18	2	1	5
Total	3.512	478	96	4	66

Fined or settled	3.512
Licenses forfeited	478
Sentences suspended	96
Jail	4
Investigations, acquittals, cancellations, etc	66
Total	4,156
Investigations, acquittals, cancellations, etc	66
Successful	4,090

FISH DISTRIBUTION

A glance at the comparative distribution for the last five years indicates a falling off this year as compared with that of other years. This is accounted for by the exceptionally advanced spring of 1921 which induced very early spawning of many fish, especially of those which ascend streams for that function. Because of climatic conditions, the fish spawned in deep water inaccessible to the spawntakers. Notable decreases occurred in the distribution of shad, lake herring, smelt, maskalonge, pikeperch, yellow perch fry, tomcod, flatfish and lobster.

Fish Distribution by Stations From January 1, 1921, to December 31, 1921

Adirondack	8,225,876
Bath	982,176
Caledonia	26,067.157
Chautauqua	4.212,240
Cold Spring Harbor	334,983,967
Delaware	817,860
Fulton Chain	16,226,564
Linlithgo	8,447,925
Oneida	13,892,651
St. Lawrence	16,991,000
Warrensburg	1,350,540
Dunkirk	125,474,000
Canal ponds	7,690
Summitville	267.150
	557,856,796

ADIRONDACK HATCHERY

Whitefish, fry[1]	6,174,000
Landlocked salmon, fingerlings	51,673
Brown trout, fingerlings	54,944
Rainbow trout, fingerlings[2]	34,600
Lake trout, fry	28,500
Lake trout, fingerlings	100,000
Brook trout, fry	819,000
Brook trout, adv. fry	236,000
Brook trout, fingerlings	437,159
Maskalonge, fry[3]	290,000
	8,225.876

BATH HATCHERY

Brown trout, adv. fry[4]	57.000
Brown trout, fingerlings[4]	75,721
Rainbow trout, fingerlings[5]	37,650
Lake trout, adv. fry	12,000
Lake trout, fingerlings	67,600
Brook trout, adv. fry	99,896
Brook trout, fingerlings	542,309
	892.176

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[1] Five million six hundred twenty-eight thousand Whitefish eggs were sent to the Caledonia hatchery and 504,000 to the Fulton Chain hatchery for development and distribution.

[2] The eggs from which these fish were produced were furnished by the Cold Spring Harbor hatchery.

[3] The eggs from which these fish were produced were furnished by the Chautauqua hatchery.

[4] The eggs, from which these fish were produced were furnished by the Caledonia hatchery.

[5] The eggs, from which these fish were produced were furnished by the Caledonia and the Cold Spring Harbor hatcheries.

CALEDONIA HATCHERY

Whitefish, fry[6]	4,200,000
Lake herring, fry	14,596,000
Steelhead trout, fingerlings	118,000
Brown trout, fingerlings	240,140
Brown trout, adults	13
Rainbow trout, adv. fry	21,600
Rainbow trout, fingerlings	220,470
Rainbow trout, adults	19
Lake trout, fingerlings	584,415
Brook trout, adv. fry	186,500
Pikeperch, fry	5,900,000
	26,067,157

CHAUTAUQUA HATCHERY

Bullheads, adults	305
Brook trout, fingerlings	511,925
Maskalonge, fry[7]	3,700,000
Miscellaneous, adults	10
	4,212,240

COLD SPRING HARBOR HATCHERY

Brown trout, fingerlings[8]	110,300
Rainbow trout, fingerlings[9]	58,700
Brook trout, fingerlings[10]	494,950
Brook trout, adults	17
Smelt, fry[11]	85,440,000
Pikeperch, fry	750,000
Tomcod, fry	171,000,000
Flatfish, fry	66,000,000
Lobster, fry	11,130,000
	334,983,967

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[6] The Whitefish were produced from eggs collected by the Adirondack hatchery.

One hundred thousand Brown Trout eggs were sent to the Bath hatchery and 201,600 to the Delaware hatchery for development and distribution.

Fifty-three thousand seven hundred sixty Rainbow Trout eggs were sent to the Bath hatchery, 72,000 to the Delaware hatchery and 55,200 to the Linlithgo hatchery for development and distribution.

Thirty thousand Brook Trout fry were sent to the Linlithgo hatchery for further development and distribution.

Fifty thousand Rainbow Trout eggs were sent to the Willowemoc hatchery at DeBruce for development and distribution in local waters and from this stock 21,600 were planted and are included in the above total.

Eighty-four thousand Brown Trout eggs and 24 Albino Lake Trout yearlings were given to the U. S. Bureau of Fisheries in return for courtesies.

[7] Maskalonge eggs from which 290,000 fry were produced were sent to the Adirondack hatchery for development and distribution.

[8] One hundred seventy-three thousand five hundred twenty Brown Trout eggs were sent to the Bath hatchery for development and distribution.

[9] Seventy-six thousand three hundred twenty Rainbow Trout eggs were sent to the Adirondack hatchery and 112,000 to the Delaware hatchery for development and distribution.

One hundred thousand Rainbow Trout eggs were sent to the Commission of Inland Fisheries, Providence, R. I., in exchange for courtesies.

[10] One hundred ninety-five thousand eight hundred forty green Brook Trout eggs were received from Tuxedo Park in exchange for Smelt eggs.

[11] Five million three hundred forty thousand Smelt eggs were sent to the Michigan Fish Commission in exchange for Pikeperch eggs.

DELAWARE HATCHERY

Brown trout, adv. fry[13]	27,000
Brown trout, fingerlings[12]	27,650
Rainbow trout, adv. fry[13]	49,500
Rainbow trout, fingerlings[13]	40,500
Brook trout, fry[14]	302,000
Brook trout, adv. fry	133,500
Brook trout, fingerlings	237,700
Brook trout, adults	10
	817,860

FULTON CHAIN HATCHERY

Frostfish, fry	290,000
Whitefish, fry[15]	15,170,000
Landlocked salmon, fingerlings	48,500
Lake trout, fry	63,500
Lake trout, fingerlings	15,000
Brook trout, fry	104,500
Brook trout, adv. fry	241,500
Brook trout, fingerlings	293,559
Brook trout, adults	5
	16,226,564

LINLITHGO HATCHERY

Shad, fry	703,125
Rainbow trout, fingerlings[16]	47,000
Brook trout, fry[17]	210,000
Brook trout, fingerlings[18]	37,800
Pikeperch, fry	7,400,000
Yellow perch, fry	50,000
	8,447,925

ONEIDA HATCHERY

Bullhead, adults	15
Brook trout, fry	347,500
Brook trout, fingerlings	28,500
Smallmouth bass, fry[19]	150,900
Smallmouth bass, fingerlings	251,500
Pikeperch, fry	12,750,000
Yellow perch, fingerlings	364,200
Miscellaneous, adults	36
	13,892,651

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[12] The eggs, from which these fish were produced, were furnished by the Caledonia hatchery.

[13] The eggs, from which these fish were produced, were furnished by the Caledonia and Cold Spring Harbor hatcheries.

[14] One hundred thousand Brook Trout fry were sent to the Summitville field station for further development and distribution.

[15] Five hundred and four thousand Whitefish eggs were received from the Adirondack hatchery.

[16] The eggs, from which these fish were produced, were furnished by the Caledonia hatchery.

[17] One hundred thousand Brook Trout fry were sent to the Summitville field station for further development and distribution.

[18] Thirty thousand Brook Trout were received from the Caledonia hatchery for further development and distribution.

[19] Fifty thousand Smallmouth Bass fry were sent to the Canal ponds at Fort Hunter.

ST. LAWRENCE HATCHERY

Smallmouth bass, fingerlings	91,000
Pikeperch, fry	16,900,000
	16,991,000

WARRENSBURG HATCHERY

Chinook salmon, fingerlings[30]	4,000
Landlocked salmon, fingerlings[30]	4,000
Brook trout, fingerlings	1,342,540
	1,350,540

DUNKIRK HATCHERY

Whitefish, fry	21,960,000
Lake herring, fry	103,514,000
	125,474,000

CANAL PONDS, SCHUYLERVILLE

Bullhead, fingerlings	4,050
Smallmouth bass, yearlings	100
Largemouth bass, fingerlings	3,540
	6,690

SUMMITVILLE FIELD STATION

Brown trout, fingerlings	6,650
Rainbow trout, fingerlings	11,600
Brook trout, fingerlings	248,900
	267,150

Distribution of Fish by Species From January 1, 1921, to December 31, 1921

Bullhead, fingerlings	4,050
Bullhead, adults	320
Shad, fry	703,125
Frostfish, fry	290,000
Whitefish, fry	47,504,000
Lake herring, fry	118,110,000
Chinook salmon, fingerlings	4,000
Landlocked salmon, fingerlings	104,173
Steelhead trout, fingerlings	118,000
Brown trout, adv. fry	84,000
Brown trout, fingerlings	515,405
Brown trout, adults	13
Rainbow trout, adv. fry	71,100
Rainbow trout, fingerlings	450,520
Rainbow trout, adults	19

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[30] These fish were received from the New York Aquarium in return for courtesies.

Lake trout, fry	92,000
Lake trout, adv. fry	12,000
Lake trout, fingerlings	767,015
Brook trout, fry	1,783,000
Brook trout, adv. fry	897,396
Brook trout, fingerlings	4,175,342
Brook trout, adults	32
Smelt, fry	85,440,000
Maskalonge, fry	3,990,000
Smallmouth bass, fry	150,900
Smallmouth bass, fingerlings	342,500
Smallmouth bass, yearlings	100
Largemouth bass, fingerlings	3,540
Pikeperch, fry	43,700,000
Yellow perch, fry	50,000
Yellow perch, fingerlings	364,200
Tomcod, fry	171,000,000
Flatfish, fry	66,000,000
Lobster, fry	11,130,000
Miscellaneous, adults	46
	557,856,796

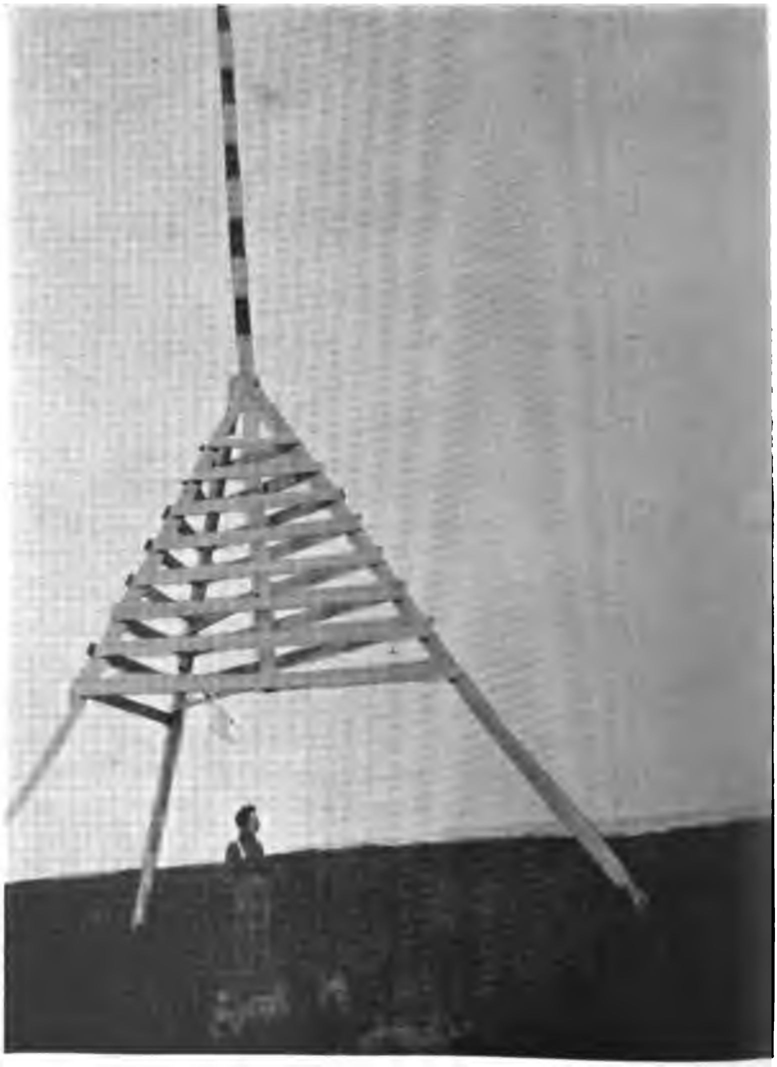
FISH DISTRIBUTION BY STATIONS

1917–1921

	1917	1918	1919	1920	1921
Adirondack	8,828,224	7,115,874	6,923,203	7,345,001	8,225,876
Bath	1,410,000	1,271,724	1,091,046	1,180,886	982,176
Celedonia	44,793,856	39,196,532	39,192,677	31,462,407	26,067,157
Chautauqua	27,723,300	1,790,928	4,401,438	4,991,210	4,212,240
Cold Spring Harbor	297,338,215	249,428,425	303,035,400	470,156,120	334,983,967
Delaware	977,275	852,977	1,029,560	631,460	817,860
Fulton Chain	15,503,500	17,750,300	14,485,840	16,950,996	16,226,564
Linlithgo	20,703,835	20,740,294	20,932,650	14,103,069	8,447,925
Oneida	51,260,271	47,272,480	30,003,255	32,330,700	13,892,651
St. Lawrence	6,487,935	10,239,982	20,614,018	13,323,547	16,991,000
Warrensburg	700,112	635,168	934,900	1,219,450	1,350,540
Dunkirk	....	....	86,208,000	141,238,000	125,474,000
Canal Ponds	....	28,842	100,768	38,420	7,690
Summitville	....	....	....	87,150	267,150
	475,729,323	396,323,526	528,952,755	735,058,416	557,856,796

Distribution of Fish by Species From January 1, 1917, to December 31, 1921

	1917	1918	1919	1920	1921
Bullhead fingerling	....	22,210	48,500	4,850	4,050
Bullhead yearlings	....	....	5,748	1,850	....
Bullhead adults	....	200	209	....	320
Buckeye shiner fingerlings	....	....	....	9,500	....
Shad fry	120,000	....	2,160,000	1,776,279	703,125
Shad fingerlings	2,665	2,054	....	....	....
Frostfish fry	540,000	126,525	....	....	290,000
Whitefish fry	28,351,000	24,360,524	19,015,000	32,123,000	47,504,000
Lake herring fry	77,000,000	38,115,000	106,978,000	151,250,000	118,110,000
Chinook salmon fry	230,000	....	....	....	....
Chinook salmon fingerlings	111,000	....	....	....	4,000
Landlocked salmon advanced fry	....	....	49,387	....	....
Landlocked salmon fingerlings	20,245	140,732	120,081	131,037	104,173
Landlocked salmon yearlings	....	....	27	....	....
Steelhead trout fingerlings	284,660	74,100	142,900	466	118,000
Brown trout fry	159,000	55,000	36,000	....	....
Brown trout advanced fry	....	4,000	36,000	100,500	84,000
Brown trout fingerlings	481,750	497,825	550,520	478,666	515,405
Brown trout adults	45	2	10	3	13
Rainbow trout fry	31,000	....	47,000	....	....
Rainbow trout advanced fry	....	14,000	....	12,000	71,100
Rainbow trout fingerlings	568,074	200,125	271,741	417,582	450,520
Rainbow trout adults	96	12	12	7	19
Black spotted yearlings	....	715	....	....	....
Lake trout fry	1,405,000	2,335,300	683,000	162,500	92,000
Lake trout advanced fry	....	64,000	38,000	326,350	12,000
Lake trout fingerlings	1,566,675	2,138,592	1,053,700	1,217,655	767,011
Lake trout yearlings	....	2,200	adults 6	....	....
Brook trout fry	1,849,000	1,136,000	1,079,000	1,280,500	1,783,000
Brook trout advanced fry	....	24,500	1,119,650	715,700	897,396
Brook trout fingerlings	2,449,695	2,133,825	4,070,579	4,179,234	4,175,342
Brook trout yearlings	....	750	....	....	....
Brook trout adults	7,151	13	18	....	32
Smelt fry	126,767,411	119,392,000	141,886,000	105,801,000	85,440,000
Maskalonge fry	6,439,500	3,950,000	4,251,500	5,421,720	3,990,000
Maskalonge fingerlings	....	....	....	187	....
Crappie fingerlings	....	1,000	250	300	....
Crappie adults	....	....	5	....	....
Smallmouth bass fry	15,875	94,500	166,000	250,000	150,900
Smallmouth bass advanced fry	....	1,000	1,800	....	....
Smallmouth bass fingerlings	84,985	26,544	83,768	123,010	342,500
Smallmouth bass yearlings	....	....	....	....	100
Smallmouth bass adults	21	67	77	....	....
Largemouth bass fingerlings	....	4,300	43,870	15,270	3,540
Largemouth bass adults	....	....	42	....	....
Rock bass fry	2,320	....	....	....	....
Rock bass fingerlings	....	611	....	....	....
Long-eared sunfish fingerlings	....	....	15,000	....	....
Pipeperch fry	49,900,000	54,722,250	69,481,000	61,370,000	43,700,000
Yellow perch eggs	....	1,740,000	....	....	....



Oyster Land Signs — Old Style Signal With Wood.

DISTRIBUTION OF FISH BY SPECIES—*Concluded*

	1917	1918	1919	1920	1921
Yellow perch fry....	4,800,500	2,675,000	....	3,000,000	50,000
Yellow perch fingerlings............	178,575	120,050	162,000	272,000	342,500
Tomcod fry........	129,600,000	102,500,000	118,000,000	276,081,250	171,000,000
Flatfish fry........	33,600,000	33,000,000	37,000,000	75,000,000	66,000,000
Sea bass fry........	3,000,000	....	....	....	....
Lobster fry........	6,163,080	6,648,000	20,356,000	13,536,000	11,130,000
Miscellaneous fingerlings............	....	....	300	....	46
	475,729,323	396,323,526	528,952,755	735,058,416	557,856,796

BUREAU OF MARINE FISHERIES

Receipts. The total receipts of the Bureau from all sources during the year amounted to $29,849.89, which was a small increase over the previous year.

During the year 11 perpetual franchises were surrendered to the State; 31 leases of shellfish grounds were assigned back to the State; 21 leases expired; three new leases were issued, and two renewals of leases were granted for a further term of 15 years; 83 sanitary certificates were issued, setting forth that the shellfish from the grounds mentioned therein were fit for food. Other licenses granted were lobsters, 77; fish food licenses, 45; menhaden licenses, 15. There were 55 recordings made, and five applications for shellfish lands were filed in the Bureau; 123,428 pieces of imported and domestic game were tagged; and 13,500 tags were sold to licensed game farms and clubs under the supervision of special game protectors. At the close of the year 556 perpetual franchise grants and 174 leases, together covering 21,084.6 acres of shellfish grounds, were in force.

Collection of Shad Eggs. The State boat, " Rednav," has been in continuous commission throughout the entire season, and during the month of May was in the Hudson river at Kingston, assisting in the collection of shad eggs. During this period several million of these eggs were gathered and sent to the State hatcheries for hatching. After the completion of this work, the boat was employed in Raritan Bay and Long Island Sound, repairing and erecting signals in connection with the usual survey work of the Bureau and testing out the sanitary condition of the shellfish beds with Dr. Parsons, Federal bacteriologist, and Engineer Robert Micknas of this Bureau.

New Signals. In addition to the regular initial and relocation surveys of the Bureau, which have been carried forward, a number of new signals on which the location of the shellfish areas and boundaries depend, were erected during the year: also repairs were made to other signals wherever necessary. A new type of signal was introduced, which is preferable in many respects to the older type of wooden tripod. The new signals consist of galvanized angle steel towers, the upper parts being boarded and painted. As this type of signal has a greater height and surface than the older type of signal, it is visible from a much greater distance, which is of advantage, as the signals are sometimes observed from positions on the water seven miles away.

Inspections have been made with the aid of the State boat to determine the positions of natural growth shellfish areas, and also to locate the positions from which shellfish were taken for bacteriological analysis.

A survey was made during the month of May to determine the positions of marking buoys inclosing the shad spawning area in the Hudson river at

Kingston, so that the positions could be plotted on the government charts covering this area.

Frequent inspections also were made during the season to determine whether shellfish areas were being illegally planted; also to check the boundaries of the leased shellfish beds, in order to determine whether the shellfish planters were cultivating a greater area than that embraced in the leases. A new set of tracings was made, showing the location and area of each shellfish lot granted by the State, these maps being of assistance to the planters, as they show the relative positions of the leased areas, and the areas available for leasing.

New Style Steel Signals.

DIVISION OF LANDS AND FORESTS

DIVISION OF LANDS AND FORESTS

Clifford R. Pettis	*Superintendent of State Forests*
William G. Howard	*Assistant Superintendent of State Forests*
A. B. Strough	*Land Clerk*
Albert H. King	*Forester*
Arthur S. Hopkins	*Forester*
Benson H. Paul	*Forester*
Karl Schmitt	*Forester*
Kinne F. Williams	*Forester*
Wilbur F. Smith	*Chief Land Surveyor*
E. M. Merrill	*Surveyor*
Lawrence McGrath	*Examiner of Forest Lands*
A. T. Davis	*Forest Surveyor and Draftsman*
A. F. Amadon	*Blister Rust Supervisor*

DIVISION OF LANDS AND FORESTS

The work of this Division has been during the year one of marked advance in forest progress.

Many substantial acquisitions of property as additions to the State Forest Preserve have been made; the property which the State now has in its Preserve has been protected from trespass more efficiently than before; hundreds of miles of line have been run re-establishing the boundaries of the Forest Preserve property.

The past year has been one of extraordinary drought, accompanied with more fires than ever before reported, and our fire protective system has been taxed at times to what would seem to be a breaking point, but the organization was able to cope with the situation, and the forest fire loss is far less than might be expected.

Reforesting work has gone steadily forward until now we have one of the largest forest nurseries in the world, millions of trees have been supplied to private owners, and some planting has been done upon the Forest Preserve.

Much effort has been expended in increasing the availability of the Forest Preserve as a playground and recreation field for the people through the building of trails, fireplaces, lean-tos, and other improvements of this character; manuscripts have been prepared, pamphlets printed, lectures given, and other work of this kind performed.

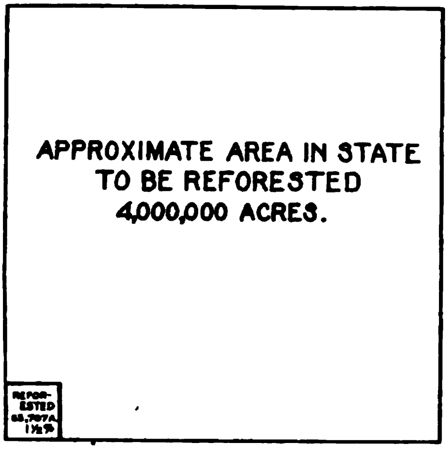
Experiments have been conducted in relation to the control of the white pine blister rust, and this work has been put on a firm and substantial basis, and the vital part of the problem, namely, the eradication of currants and gooseberries upon white pine areas has proceeded more rapidly than ever before, and many thousands of acres of land in the white pine belt have been cleared and made safe from the inroads of this disease.

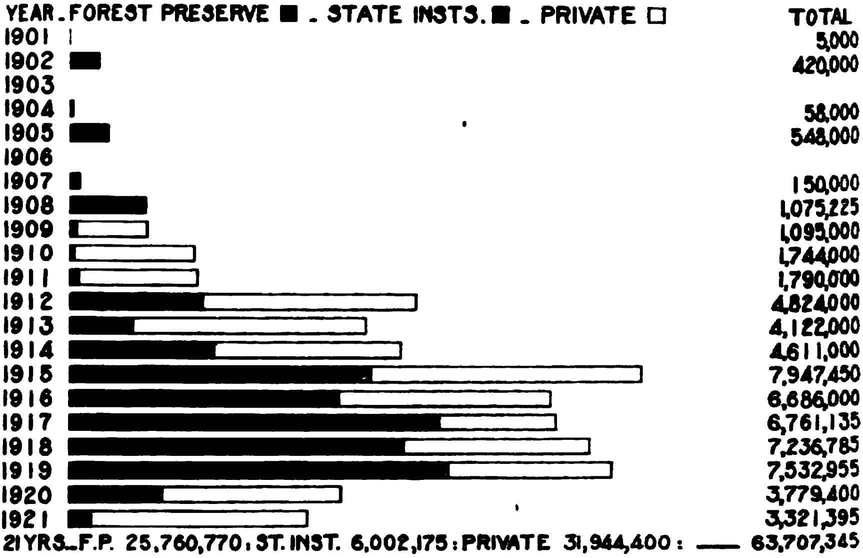
Various small parks and reservations under control of the Division have been cared for, improvements made, and the property protected; and a very decided advancement has been made which was possible through co-operation with the United States Forest Service in increasing the fire protective system to cover the other forest regions of the State not heretofore under the protective organization.

The Forest Preserve. The land which has been acquired by the State for forestry purposes in the twelve Adirondack and four Catskill counties is by law defined as the Forest Preserve. In extent it consists of nearly 2,000,000 acres. The parcels are of varying size, including all conditions of prevalent topography, forest type, and lands and water scattered through the Adirondack and Catskill regions. A great deal of the field work in connection with the protection of this property is done without increased cost to the State through the services of the forest rangers when they are not engaged in forest fire protection work.

Trespass. There is a slight increase over last year in the total value of the timber cut in trespass cases, which is accounted for by the fact that $213, or substantially one-half of the value of the material computed, was cut in three cases where the trespassers claim title to the land adversely to the State. Practically all the other cases were due to the indefinite condition of lines, and the trees were cut by the owners of adjacent land. The work which the Commission has done in protecting State land and the punishment which has been meted out to trespassers have demonstrated that timber cannot be cut upon State land without the trespasser suffering a severe loss. The reports which have been received of trespass upon the Forest Preserve during the calendar year are twenty cases, in which the aggregate value of the mateial is computed as $433.37.

PROGRESS IN FOREST PLANTING





PREPARED BY THE DIV. OF LANDS & FORESTS
CONSERVATION COMM. STATE OF NEW YORK.

Occupancy. One of the big problems which the Department has had for many years is the illegal use of the Forest Preserve, usually beginning in a small way, which, if left undisturbed, ripens into a larger use and soon an adverse claim of title and eventually an attempt to alienate the State's interest. During the past year our rangers have continued to scout the Forest Preserve; have detected several heretofore unreported cases of occupancy; and diligent efforts have been made to get the people to vacate. As a result in practically every case where new occupancy has been reported during the year the place has been vacated already. In regard to the cases heretofore reported, people have either vacated or a reduction has been made by transmitting such facts as we have to the Attorney-General with an order to prosecute. There are now but twenty-six cases remaining out of nearly one thousand, and this office must make further investigation into these cases and either have the people vacate or issue an order for prosecution.

Boundaries. The location of the property lines of the Forest Preserve is becoming of greater importance each year. Some years ago State land was conspicuous on account of its poor quality, but during the last two decades or more the State land has been better protected; the private land has often been lumbered, and today the situation is reversed. The State land is distinctive on account of the fact that there is now upon it the best timber in the Adirondack and Catskill Forest sections.

With the increase in value, determination of these lines became more important and at the same time the field work is becoming more difficult, for the reason that a majority of the surveys fixing these boundary lines was run more than a century ago, and the lines were monumented by blazing trees, some of which are now dead, many decaying, and the lines are fast becoming obliterated, making the field work more difficult and expensive.

The purpose in establishing these boundary lines is threefold: First, surveys are usually made on account of the fact that there is some particular necessity for surveying the line at the time; second, to monument the lines when established, nickel bolts being used for this purpose, and third, the purpose is to tie these surveys one to another and work out a correct base map, tying in all the surveys into one complete map. The establishment of lines is of great assistance in preventing trespass, aiding the local ranger in knowing where the State property is located; and its value in the future when the old land marks have disappeared cannot be easily measured. About seven parties have been engaged in field work of this kind during as much of the year as weather conditions permitted.

Reforestation. There was an area of approximately 120,000 acres of land in the Forest Preserve, which, on account of fire and misuse, were not through natural means within a reasonable time becoming covered with a forest. Therefore, planting on so much of this land as had sufficient soil was desirable. Such planting was commenced in 1902 and has continued each year. During this time approximately 25,700 acres of this land have been reforested. The amount of planting during the past year has been less than in any year since 1913. This is due to the fact that during the war for various reasons we were unable to maintain the productive capacity of our nurseries. There were fewer trees available this year than usual, and practically all of such trees were sold to private owners for reforesting. The nurseries are, however, becoming rehabilitated, and there will be stock available for increased planting the coming year.

Acquisition. There has been comparatively little land offered for sale to the State during the past year, and for this reason the amount of land acquired is less than for several years past. Much of the field work in connection with acquisition has been in examining land, collection of data, and preparation either for settlement of pending claims on account of appropriation or getting together necessary data for preparation of witnesses for trial of such cases. A list of the lands, the title to which has been approved by the Attorney-General during the year, will be found elsewhere in this report. The area of land not heretofore approved for acquisition, but which the Land Board has consented to acquire during the year is 18,526.79 acres

During the past year the Land Board has approved the acquisition of the

Indian Pass Brook, a high stream source of the Hudson River, perpetually protec
by State owned forests

steep slopes at the headwaters of the Elk Lake Watershed, the acquisition of nearly all of the John's Brook Valley, and a parcel of about ninety acres on the north side of Lake Placid, including some shore frontage upon the lake. The Shore Owners' Association of Lake Placid has agreed to contribute $15,000 without condition as part of the purchase price for this property, and steps are being taken to obtain covenants from the various owners upon Lake Placid, providing for permanent forestry upon these lands. Many other smaller parcels have been acquired both in the Adirondacks and Catskills during the year.

Area. The area of the Forest Preserve changes each year. It is increased largely through purchase. Some changes are made on account of surveys, which show a larger or smaller area than that for which the parcel has been carried upon our books. There is some decrease due to litigation, where the courts decided the State never had title to the land. The following is a statement of the area as of January 1, 1922:

FOREST PRESERVE AREA.

January 1, 1922.

Adirondack Preserve:			
Area January 1, 1921			1,809,966.99
Additions:			
Acquisitions	44,800.78		
Corrections per surveys, etc	558.52		
		45,359.30	
Losses:			
Court decisions	385.00		
Reclassification	......		
Surveys, etc.	616.46		
		1,001.46	
Net gain			44,357.84
Catskill Preserve:			
Area January 1, 1921			126,525.30
Additions:			
Acquisition	11,906.12		
Correction by surveys	48.82		
		11,954.94	
Losses:			
Correction by surveys		288.90	
Net gain			11,666.04

SUMMARY.

Adirondack Preserve	1,854,324.83
Catskill Preserve	138,191.34
Total	1,992,516.17

The reductions are due to litigation which has been prosecuted by the Attorney-General's office, involving land in which the courts have held that the State did not have title; also some small parcels of loan mortgage land which, when carefully examined, were ascertained not to be forest preserve in accordance with the statutory definition. In reality the State has not lost any land, but there has simply been a determination that these parcels were erroneously upon the list of parcels constituting the forest preserve. These parcels are nearly all outside of the limits of either the Adirondack or Catskill park.

Recreational Uses. Continuing the policy inaugurated in 1920 for the construction of public camp sites and trails, a program of work for the season of 1921 was prepared in this office before the season opened. This program necessarily had to be curtailed because of the failure of the Legislature to make specific appropriations for this work. Because the principal item of expense was for labor, we were able to make some headway through utilizing ranger labor for construction of camp sites, trails, etc., during periods of wet weather. While the unusual weather conditions made it impossible for the rangers to be spared for this work except for a small portion of the time, a considerable showing has been made. Over 100 miles of trails were cleared and about half this mileage was marked with the special metal trail markers adopted by the Commission for that purpose, and 100 board signs were put up to mark junction points on these trails. Ten open camps were built. Many of the fireplaces prepared for public camp sites along the highways had to be repaired and in addition to putting the old fireplaces in good condition 47 new ones were built. The following table shows the work done in the different districts:

Summary of Trail, Open Camp and Fire Place Work, 1921

District	Miles of Trail Cleared	Number of Open Camps Built	Number of Fireplaces Built
1	12	2	4
2	43	0	6
3	30	0	6
4	18	6	21
5	0	2	10
Totals	103	10	47

Use of Cedar Point by Campers, July, 1921.

The public camp sites provided by the Commission attracted a great deal of favorable comment from persons traveling through the forest preserve. A new edition of some of the recreation circulars was prepared early in the season and distributed in response to requests received by mail and in other ways. There has been a tremendous demand for these publications. The camps have been used a great deal and those along the main traveled highways have hardly been vacant a night during the tourist season. There is no question but that these camps have already paid for themselves in the prevention of forest fires, for they serve the double purpose of concentrating camping at certain definite points and what is even more important, of providing suitable places for campers to build their fires so that these fires are less likely to escape and do extensive damage to the woods.

Lake George Islands. The improvements which have been made in the last few years have been kept in repair and the islands protected from erosion. The use of these islands for camping and recreational purposes has been increasing from year to year. During the past season these islands have been far more popular than ever and at times it has been almost impossible to care for all the campers. A ranger maintains headquarters in a new house which has been built on Glen Island. He looks after the campers, issues permits, protects the islands from fire, and enforces the necessary sanitary regulations.

St. Lawrence Reservation. The land owned by the State consists of nine separate parcels at various points along the river in the vicinity of the Thousand Islands. At these places there are docks and pavilions. During the past year a new pavilion has been built on the recently acquired park at Long Point on Chaumont Bay. An additional dock has been built on Goose Bay at Kring's Point, and another dock is being constructed on Mary's Island. The increased use of automobiles has made these parks more accessible to people, and has made necessary the building of roads, in order that those parks which are upon the mainland may be reached more readily. A new road has been constructed across a reservation which the State owns to the Kring's Point property. Other short roads at Burnham's and Cedar Points have been very much improved. The Roosevelt highway traverses the road a short distance from the river. It has recently been completed, which will result in the increased use of these lands.

State Park Sign at Long Point, St. Lawrence Reservation.

Cuba Reservation. A decided improvement has been made in the general appearance and the use of this reservation, which consists of a lake and a narrow strip of land surrounding it in southwestern New York. There have been issued nearly 200 leases to small cottage lots, and during the past few years many fine cottages have been built, the older ones improved, and a decided change has been made for the better in the general conditions on this reservation. These leases have been granted subject to certain rules of the Commission, and we now plan further sanitary requirements, in order to better protect the health of the campers on this property.

John Brown Farm. The old barn, which occupied such a conspicuous site, was of unsightly character, and no part of the property used by John Brown, has been moved to a proper place and rests on a concrete basement. This adds greatly to the tone of the surroundings. There should be erected a bungalow for use as a home for the caretaker and the old John Brown home restored to its original form by removing additions in the rear which have been built in recent years. The house should be used solely as a place for visitors after restoration. A new road should be built around the grave and tablet bringing people to the front of the house instead of one end as at present, where there is parking space for cars and the house is best seen. An entirely new attraction can easily be made by making a short road to the east on the edge of the bluff where one of the excellent mountain views is afforded.

Increasing Demand for Camp Sites. While there has been a general and increasing use of the Forest Preserve for recreational purposes under the rules adopted by the Commission, which permit transient and temporary use for camping purposes and are limited to such on account of the provisions of the Constitution and the statute, there has been noticed an increasing demand for use with structures of a more permanent character.

The present use is confined to tents and open camps, which satisfy the needs of many, but there are numerous others who desire to erect modest camps of permanent nature under a proper authorization from the State.

An Adirondack Cruise Carry.

Article 7, Section 7 of the State Constitution prohibits the lease, sale or exchange of any part of the Forest Preserve, and, therefore, nothing of this kind can be permitted on account of the Constitutional restriction.

There are probably but few people who realize the extent of the advantages which are offered for camping. There are more than 1,150 miles of water frontage in the Forest Preserve lands, exclusive of the islands in Lake George, and there is no doubt but that one-half, or 575 miles, is admirably suited for camp sites. If this entire frontage were divided into camp sites with 200-foot frontage each, there would be approximately 15,000 available sites. Of course, not all of such camp sites should be leased, and a sufficient portion should be left for transient and temporary camping purposes. Comparatively speaking, this shore line is equivalent to more than seven times the frontage of Lake George, exclusive of the islands; or the shore line of Lake Ontario from Fort Niagara to Cape Vincent; or more than both sides of the Hudson river from its mouth to its source. It is, therefore, at once apparent that there are sufficient sites for both transient and permanent camper, also for those who can and those who cannot afford to pay a rental. The Department has had experience in recent years in leasing camp sites on the Cuba Reservation, and from what has been observed there we see no reason why this principle would not be applicable to lands in the forest preserve. Such camp sites are rented by the Federal Government in the National forests and by various states in their forest reservations. If a change were made in the Constitution permitting the leasing of camp sites, there would be a satisfaction of the demand which is now being made and a very large continuing revenue would be obtained by the State therefrom. It is further believed that the leasing of camp sites would be beneficial to the State in that a lessee would become permanently interested in the immediate locality where he had a lease, and would bcome a game protector and fire warden, both of which would be advantageous.

Use of Dock at Watterson Point, July 19, 1921.

FOREST FIRE PROTECTION

Weather conditions in the fire towns of the Adirondacks and Catskill regions during the fire season of 1921 were such as to produce the greatest fire hazard known in this State in the thirty years for which records of forest fires are available. Deficiency in precipitation (the May rainfall was only 43 per cent of the normal), particularly in the northern part of the Adirondacks, was accompanied by unusually high winds and temperature above the normal, so that what little rain fell was promptly evaporated before it had a chance to saturate the ground.

The exceptionally light snowfall of the winter disappeared very early in the spring, but dry weather and occasional frosts prevented the appearance of any considerable amount of green vegetation until along in June. Therefore, the fire hazard in the normally dangerous spring season was intensified and subsequent drought conditions in the summer and fall months maintained the hazard until November.

More fires were reported in 1921 than in any previous fire season for which records are available. The total of 726 is well above the highest previous figure of 688 in 1913. In spite of this, the area burned in 1921 was held down to one-half that burned in 1913 and to about one-sixteenth of the area of the fires of either 1903 or 1908.

The comparison with previous years bears eloquent testimony of the efficient manner in which the fires of 1921 were handled by the ranger force. The average area burned by each fire in 1921 was 37 acres, as against 80 acres in 1913 and 47 acres in 1920. Comparison is made with these years because they are more nearly comparable with the present year than others within the life of the present protection system.

Fire warnings were issued to the public in the form of cardboard fire notices sent out to the field force for posting in suitable places. In spite of the large number of fires caused each year by the carelessness of the traveling public, it is felt that these warnings are exerting a considerable influence in preventing fires from this cause, because they help to educate the public.

As a further means of calling attention to the forest fire danger, the Commission early in the spring recommended to Governor Miller that he proclaim a "Forest Protection Week." The week selected for this purpose was that beginning Sunday, May 22, 1921. Inasmuch as this was one of the worst weeks for fire in the entire season, the Governor's proclamation was particularly timely and was accompanied by considerable publicity in the press, with the result that a very large number of persons had this matter called to their attention.

Following is the text of the Governor's proclamation:

PROCLAMATION

STATE OF NEW YORK — EXECUTIVE CHAMBER

The Empire State possesses in its forests a treasure vast in extent and enormous in value — a resource that must be protected, perpetuated and increased if the prosperity of the State and its people is to continue. Our forests are at once a heritage from the past and a hope for the future.

Fire is the greatest enemy of the forests and constant vigilance on the part of all our people is necessary if the fire demon is to be held in check.

Now, therefore, I, Nathan L. Miller, Governor of the State of New York, do hereby proclaim the week beginning Sunday, May 22, 1921, as

FOREST PROTECTION WEEK

and I call upon every citizen to do his utmost to spread broadcast the word of caution regarding forest fires — so easily started, spreading so rapidly and so terribly destructive,— and to create a universal appreciation of the worth and importance of our forest heritage.

GIVEN under my hand and the Privy Seal of the State at the Capitol in the city of Albany this seventh day of May in the year of our Lord one thousand nine hundred and twenty-one.

[L. S.]

(Signed) NATHAN L. MILLER.

By the Governor:
W. WARD SMITH,
Secretary to the Governor.

In connection with enforcing the provisions of the Conservation Law devised to obtain better fire protection from forest fires along railroads, our inspectors made over 5,000 examinations of locomotives during the year. These vary from cursory inspections of locomotives in service to detailed inspections of locomotives in the repair shops and round houses. At the same time, our inspectors checked up the reports of inspections kept by the railroad companies themselves in compliance with the law.

Railroad rights of way were inspected and arrangements were made by the inspectors to secure the broadcast burning of particularly dangerous portions of rights of way prior to the opening of the fire season. This system has been found most effective in reducing the fire danger along railroad lines. In fact, on the lines of the Long Island railroad, the Commission relieved the railroad company of the necessity of establishing a patrol where the right of way had been burned broadcast in the spring to a distance of at least 200 feet on each side of the track.

It will be remembered that during the season of 1920, the New York Central lines operating through the Adirondack region, were temporarily relieved from the necessity of using oil burners as required by the 1909 order of the Public Service Commission and other orders continuing that requirement. In the early spring of 1921, the railroad company requested relief from the necessity of burning oil through the season of 1921. However, at the

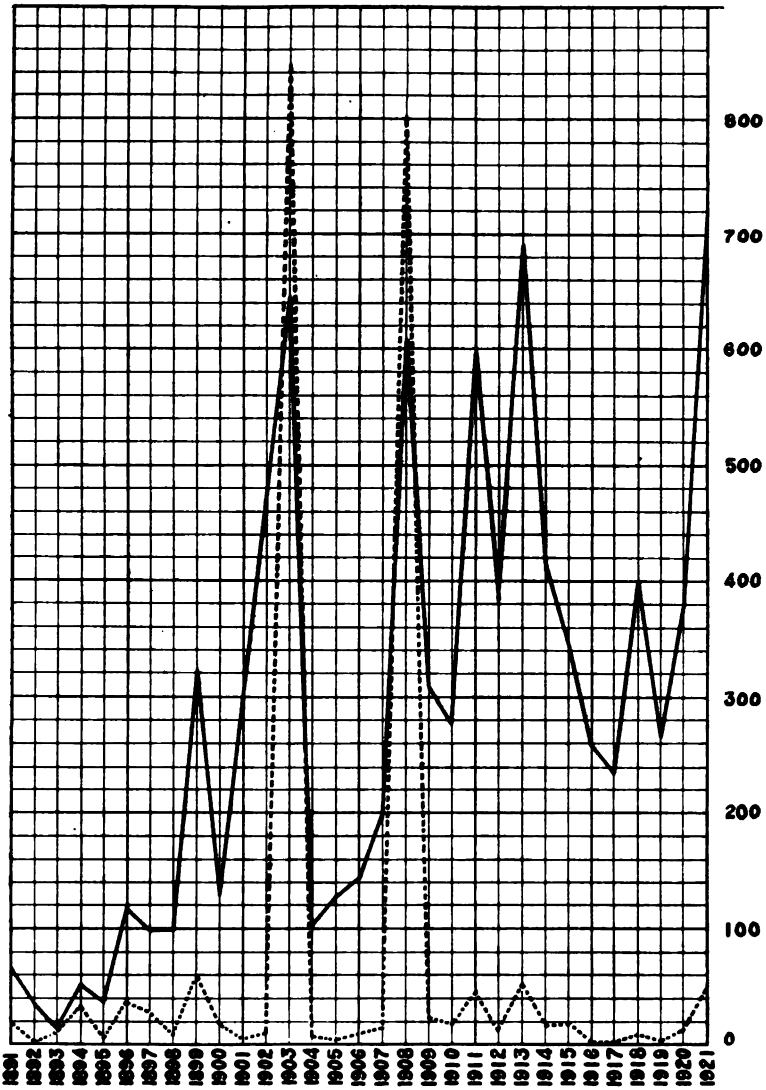


DIAGRAM SHOWING THE RELATION BETWEEN
THE NUMBER OF FOREST FIRES ———, &
DAMAGE IN THOUSANDS OF DOLLARS ……………………

PREPARED BY THE DIV. OF LANDS & FORESTS
CONSERVATION COMM. — STATE OF NEW YORK.

time the application was made and the hearing held before the Public Service Commission, the Conservation Commission felt that it would be unsafe to grant such relief, particularly during the spring months, especially so since the lack of snow during the winter made it seem reasonable to forecast a particularly serious fire season. Moreover, the railroads admitted that oil could be obtained. The fact that oil could not be obtained in sufficient quantities was the reason for relieving the railroads from necessity of burning oil during the season of 1920.

At the hearing before the Public Service Commission in the early spring the railroad companies agreed to defer their request until a later date. Several postponements for further hearings on the matter followed, and finally the railroad company agreed to drop the matter for the season of 1921. It is felt that it is particularly fortunate that oil burning was required throughout the season because of the severity of the fire hazard and likelihood of fires being started with coal burning locomotives.

Adirondack and Catskill Fire Towns

Following is a classification of the fires of the year according to causes:

Smokers	212	Lumberjacks	12
Locomotives	127	Children	9
Fishermen	118	Burning rubbish	6
Campers	66	Bee hunters	4
Lightning	47	Fireworks	1
Burning brush	38	Transmission line	1
Berry pickers	23	Burning auto	1
Hunters	26	Tractor	1
Incendiary	17	Boiling sap	1
Burning buildings	16		
			726

An explanation should be made of the 127 fires reported as caused by locomotives. These fires covered only three per cent of the total area burned. These were practically all on the outer edges of the fire towns and did only small damage.

Smokers caused the largest number of fires, being credited with 212 fires covering 11 per cent of the total area burned and doing nine per cent of the damage.

Fishermen were responsible for the third largest number of fires. These caused 118 of the total number, and to their carelessness is due the burning of 9,082 acres, with a damage of $19,110.

An unusually large number of violations of the laws relating to slash disposal and forest fires have been reported during 1921. A decrease in the number of violations of the top lopping law is noted, but the very considerable increase in violations of the fire laws is probably due to the favorable conditions for setting fires to clear land and to the close watch kept by the protective force which resulted in practically every violation being discovered and reported.

Summary of Violations of Fire Law, 1921

December 1, 1920 to November 30, 1921.

OFFENSE	Total number of cases reported	Number of cases closed	Amounts recovered
Failure to lop tops (Sub. 2, Sec. 54)	27	27	$820.00
Causing forest fires (Sub. 3, Sec. 54)	56	52	790.28
Setting fires to clear land (Sub. 5, Sec. 54)	37	36	206.39
Refusing to fight fire (sub. 14, sec. 51)	1	1	....
Failure to maintain railroad patrol (Sub. 1, Sec. 55)	....	1	....
Operating defective locomotives (Sub. 3, Sec. 55)	....	2	117.50
Totals	121	119	$1,934.17

Protective Measures

It is regrettable that owing to insufficient appropriation promotion of rangers according to the scheme of efficiency rating adopted some years ago, has had to be temporarily suspended. A record of each man's work has been kept, however, so that the rating can be made at any time when funds are available to provide for suitable promotions.

Equipment of observation stations has been kept up and renewed where necessary. A new steel tower has been erected on Ampersand Mountain station in Franklin county. A site for a new observation tower in the town of Newcomb, Essex county, has been selected on Goodenow mountain. A steel tower has been secured for this station with the extensive cooperation of landowners and lumbermen operating in that vicinity, and it is hoped to have this station in full operation by 1922. This new station will take the place of Dunbrook Mountain station, which was abandoned in 1919.

New cabins for the observers were erected at Hurricane and Vanderwacker mountains.

Continuing our policy of equipping all fire observation stations with the panoramic maps, we have during the past season installed panoramas at fourteen stations, as follows:

St. Regis, Azure, Whiteface, Hurricane, Wakeley, West, Moose River, Woodhull, Stillwater, Beaver Lake, Bald, Cat, Loon Lake, Mt. Morris.

Panoramas have been prepared for the following fourteen stations and will be installed early in the season of 1922:

Belfry, Poke-O-Moonshine, Lyon, DeBar, Ampersand, Owls Head, Kempshall, Adams, Vanderwacker, Boreas, Pharaoh, Swede, Gore, Crane.

The panoramic maps have been prepared by one of the foresters and in connection with the preparation and installation of these maps it has been possible to give important instructions to the observers regarding their work, to obtain an excellent inspection of the observation stations, and by this work to keep the office in closer touch with the operation of the observation stations.

The public has been encouraged to visit the fire observation stations, and as a result 30,578 visitors were registered at the stations during the year. Before the season opened, the observers were supplied with copies of annual reports and other literature published by the Commission and urged to familiarize themselves with this material in order that they might give information to visitors. In this way it is felt it has been possible to explain the objects of our fire protection work to a large number of persons who might otherwise not know of it.

Continuing the policy inaugurated in 1920, we have constructed additional public camp sites with fire places, and open camps. These will be discussed in more detail under the heading of "Recreational Development," but mention is made of it here because of the great importance of this work in keeping down the number of fires started by campers.

Powerful Fire-fighting Outfits

A tremendous improvement in the efficiency of our fire protection work was accomplished during 1921, by the purchase of a number of portable gasoline forest fire pumps. The outfit selected is one which has been developed primarily for the purpose of fighting forest fires. During the early part of the year when we found that this outfit had passed the experimental stage and was admirably adapted to our use in the Adirondacks, we purchased three of these pumps. The pump and engine weighs only about 125 pounds and can easily be carried anywhere in the woods by two men. It consists of a two-cylinder, two-cycle gasoline engine developing 4 to 5 horse power, to which is attached a rotary geared pump. As much as 1,500 feet of one and one-half-inch hose may be attached to the pump, so that the range from available water supplies is very considerable.

Without these pumps it would have been impossible to make the good showing in fire protection which was made during this past exceptionally severe fire season. Three of the pumps were purchased by the Commission in May and later in the summer four additional outfits were purchased for the Commission by the United States Forest Service, in accordance with its cooperation under the so-called Weeks Law.

Experiments have shown that one of these pumps is equivalent to seventy men on a fire line. Therefore, it is not at all surprising that these pumps have all paid for themselves during the present season in the saving of labor which they have effected.

Enforcement of the laws relating to the leaving of slash along and adjacent to highway rights of way has been continued. No prosecutions for violation of these statutes have been made, but the removal of the material in question has been secured in all cases, except those now pending.

Forest fire pump in action. One will do the work of a large crew of men using old methods.

At the beginning of this report, mention was made of the conditions prevailing during the fire season. This resulted in 726 fires in the fire towns, which burned 26,663 acres, and did damage estimated at $49,920. It will be noted that a large proportion of the area burned was land which had previously been burned over and that the damage to timber was comparatively small. Only six hundredths of 1 per cent of the total acreage was virgin timber. The proportion of State land burned was 12 per cent of the total. Summaries of forest fire losses by both counties and causes are attached hereto. A summary of fires according to months of occurrence is also submitted.

State Wide Forest Protection

The work of the Department in fire protection is no longer confined to the fire towns of the Adirondack and Catskill regions. For two years our fire protection system has been in effect on Long Island. This is not as intensive a system as is maintained in the fire towns where the State land is located and where timber values are greater, but a tremendous quantity of forest land is located outside the Adirondacks and Catskills and it is absolutely essential for the protection of the wood-using industries of the State that these other lands be also given adequate fire protection.

On Long Island we operated two observation stations throughout the season and one station during the greatest fire danger of the spring months. Our district ranger has been on duty continuously. The observation stations reported 144 fires. Word was given promptly to town supervisors or fire wardens. The district ranger has been able to bring about better organization of the fire wardens in the various towns, and plans are under way for the towns to purchase additional equipment specifically designed for fighting forest fires. A total of 102 fires has been reported from the Long Island district during the year. These are estimated to have burned over 11,110 acres, and damaged property to the extent of $780, a marked improvement over 1920, when 101 fires burned 17,365 acres.

A forest fire engine. Two men can carry it anywhere in the woods.

New Fire Districts

Through greatly increased allotment of Federal funds by the United States Forest Service, it has been possible during the year to greatly increase work in State-wide fire protection, that is, fire protection outside of the area of fire towns. In August, after the conference with representatives of the Forest Service, four new district rangers were appointed, the salaries of these men being paid out of the Federal funds allotted for that purpose. One of these men was assigned to each of the following districts:

1. Eastern District, comprising Washington, Rensselaer and Columbia counties.
2. Southeastern District, comprising Putnam, Dutchess, and Westchester Counties.
3. Southern District, comprising Sullivan (outside of fire towns), Orange and Rockland counties, and also that portion of Ulster county not included in the fire towns.
4. Western District, comprising portions of Cattaraugus, Allegany and Steuben counties which are well timbered.

The boundaries of the various districts have been closely drawn, but the new district rangers were instructed as to their duties and sent out into the field to map the districts assigned them in order that we might have accurate data as to the location of forest land, its condition as regards fire hazard and other information necessary in planning fire protection work.

While this work is only begun, it has received the enthusiastic approval of persons who have become familiar with it, and has already stimulated efforts of local town officials in securing better fire protection. The district rangers have been instructed to start in as soon as possible to assist in obtaining an official organization of town fire wardens and the effects of their work are already beginning to be felt.

Weeks Law

Mention has been made above of the cooperation offered by the United States Government under the so-called Weeks Law. While under this arrangement in 1920, the Government contributed about $6,000 towards the

The Celebrated Indian Pass From Lake Henderson. The Mountains (Wallface On the Left and McIntyre On the Right) Were Added This Year To the Forest Preserve.

cost of fire protection in New York State, the agreement for the present year contemplates the allotment of nearly $25,000 by the Federal Government for cooperation in fire protection. This money is made available for the purchase of gasoline fire pumps and hose referred to above, also for the employment of district rangers outside of the area of fire towns and also for the employment of men in our fire protection organization within the fire towns, for work on observation stations, fighting fires and constructing necessary permanent improvements, such as trails, camp sites, etc., as they may affect the fire protection work.

The greatly increased cooperation offered under the Weeks Law this year marks the recognition of the Federal Government's rsponsibility in assuring the country adequate fire protection. It is particularly useful to New York State to have this assistance which makes possible the extension of State-wide fire protection to areas which have long needed it and which, if given fire protection, can contribute extensively to the forest crops produced in the State.

REFORESTATION

It is now twenty years since reforestation was initiated by the State Forestry Department. Beginning with the production of trees for planting State land in 1903, the policy of reforestation was broadened in 1907 providing for the sale of trees for reforesting privately owned land at the cost of production.

In 1915 a resolution of the Commission was passed, which provided for the furnishing of trees to municipalities for reforesting publicly owned land at a special rate of fifty cents per thousand.

In 1920 a bill was passed by the Legislature providing for distribution of free trees to private land owners, under such regulations and safeguards as the Commission deems necessary. Also, during the present year, provision was made for furnishing trees free to municipalities for reforesting publicly owned land.

The following table gives a summary of tree distribution over a period of twenty years, and this table shows that during this time 31,700 acres of State owned land and 31,900 acres of privately owned land have been reforested, assuming that 1,000 trees are planted per acre:

TREES PLANTED IN NEW YORK STATE

1901–1921

YEAR	State institutions	State forest preserve	Total state land	Total private land	Total per year
1901	....	5,000	5,000	....	5,000
1902	....	420,000	420,000	....	420,000
1903	....	....	....	....	....
1904	....	58,000	58,000	....	58,000
1905	....	548,000	548,000	....	548,000
1906	....	....	....	....	....
1907	....	150,000	150,000	....	150,000
1908	....	1,050,125	1,050,125	25,100	1,075,225
1909	....	90,000	90,000	1,005,000	1,095,000
1910	....	44,000	44,000	1,700,000	1,744,000
1911	....	120,000	120,000	1,670,000	1,790,000
1912	500,000	1,346,000	1,846,000	2,978,000	4,824,000
1913	804,000	76,000	880,000	3,242,000	4,122,000
1914	908,000	1,094,000	2,002,000	2,609,000	4,611,000
1915	1,141,450	3,030,000	4,171,450	3,776,000	7,947,450
1916	862,000	2,875,000	3,737,000	2,949,000	6,686,000
1917	1,065,800	4,059,120	5,124,920	1,636,215	6,761,135
1918	426,000	4,213,100	4,639,000	2,597,785	7,236,785
1919	107,800	5,160,100	5,267,900	2,265,055	7,532,955
1920	51,500	1,257,425	1,308,925	2,470,475	3,779,400
1921	135,625	165,000	300,625	3,020,770	3,321,395
	6,002,175	25,760,870	31,762,945	31,944,400	63,707,345

The planting of trees by private land owners during the past year has shown a remarkable increase over the previous year and has exceeded the pre-war record of 1916. We have experienced a shortage of stock owing to the fact that during previous seasons we have been unable to obtain sufficient seed of the desired species. It is a well-established fact that forest trees only produce good crops of seed at intervals of 3 to 5 years. Owing to this fact, red pine seeds were obtainable for sowing this year for the first time since 1915. Advantage was taken of the excellent crop of this seed and enough secured for sowing in the spring of 1922. However, funds are not usually available to take advantage of such a condition and it is usually necessary to buy only a sufficient quantity of seeds for the current year and to reply upon seed produced that year or held in storage by seed dealers and placed on the market at increased prices.

Newly developed portion of Saratoga Nursery, showing areas transplanted in the Spring and Fall of 1921 — Approximately three million transplants included in this picture.

Nurseries. Owing to the small amount of stock in the nurseries during the past season, opportunity has been given for growing cover crops to improve the soil. Ten acres of cover crop were sown at Salamanca nursery and fifteen at the Adirondack nurseries. A larger area of land was cleared at the Saratoga nursery, making a total of about eighty acres available for nursery work at that place. The ground available for producing trees at the present time is as follows:

Saratoga Nursery	80 acres
Adirondack Nurseries	22 acres
Salamanca Nursery	10 acres
Central Islip Nursery	3 acres

All of the above area is not at present occupied by tree growth and it is not intended that all this area should be occupied with tree growth at one time, provision being made for the rotation of crops, a green cover crop to be grown upon the land every third year.

Trees were shipped from the various nurseries as follows:

Saratoga	2,109,170
Saranac Inn	488,700
Salamanca	182,025
Central Islip	210,500
Comstock	176,000
Rome	155,000

Fall transplanting was undertaken in the nurseries this year on a larger scale than ever before. At the Saranac Inn nursery 855,000 white pine seedlings were transplanted during the month of September, and at the same time in the Saratoga nursery 2,545,900 were transplanted. Previous experiments have shown that fall transplanting proved successful on light sandy soils and by so doing much of the work which has usually been crowded into the short planting season in the springtime can be accomplished and labor more efficiently used.

An inventory of the stock on hand in the nurseries November 1, 1921, shows an increase over the inventory of a year ago of 5,922,700 trees, and a total of 21,842,550 trees.

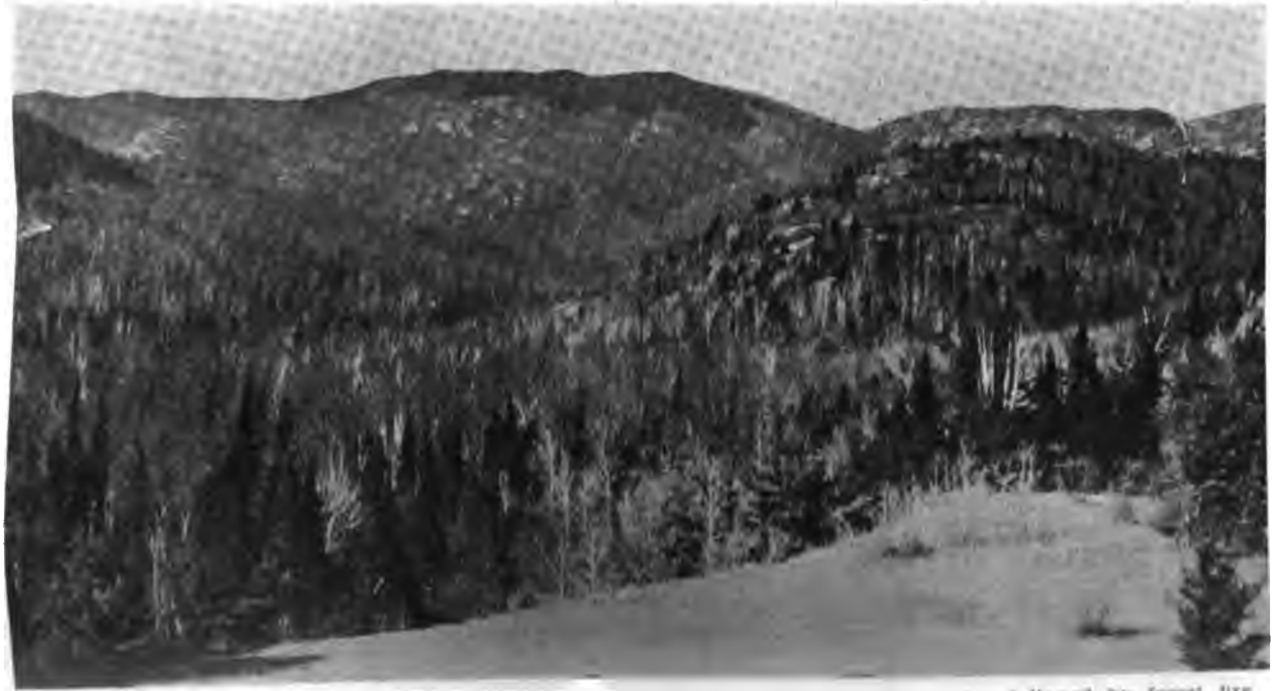
The total number of trees distributed from State nurseries amounted to 3,321,395, of which

2,489,670 were supplied to private land owners.
531,100 were supplied to municipalities.
135,625 were supplied to State institutions.
165,000 were used for reforesting State land in the Forest Preserve.

The species and number of trees distributed were as follows:

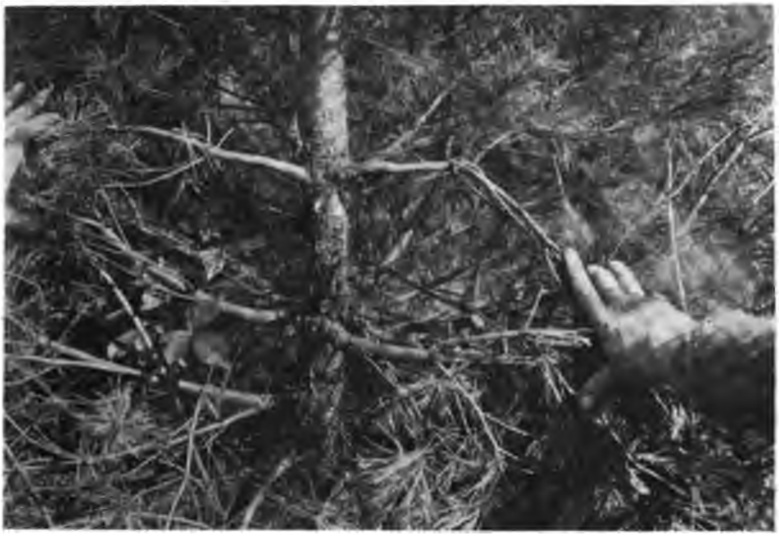
White pine 6 yr. transplants	6,500
White pine 5 yr. transplants	25,500
White pine 4 yr. transplants	48,000
White pine 3 yr. transplants	106,670
White pine 2 yr. seedlings	20,500
Scotch pine 5 yr. transplants	6,500
Scotch pine 4 yr. transplants	496,075
Scotch pine 3 yr. transplants	812,750
Scotch pine 2 yr. seedlings	65,200
Red pine 5 yr. transplants	11,000
Norway spruce 5 yr. transplants	500
Norway spruce 4 yr. transplants	739,250
Norway spruce 3 yr. transplants	375,450
Norway spruce 2 yr. seedlings	132,500
White spruce 3 yr. transplants	159,250
White spruce 2 yr. seedlings	500
White cedar 4 yr. transplants	21,950
White cedar 3 yr. transplants	120,650
White cedar 2 yr. seedlings	1,500
European larch	1,000
Black locust	53,300
White ash	9,750
Carolina poplar cuttings	97,600
Carolina poplar rooted cuttings	9,500
Total	3,321,395

Free Trees. Free trees provided for under the "Free Tree Bill," chapter 460, Laws of 1920, will be ready for distribution during the spring of 1922. Only two-year seedlings will be available under this act next spring, as the law was interpreted to provide for the growing of trees with funds specifically appropriated under the law. Rules and regulations for distributing trees under the provisions of this law have been prepared by the Commission and will be ready for distribution during the early part of next year. The requirements to be met in order to secure free trees are merely that the trees are to be properly cared for, the land is to be reforested and protected, and every necessary care taken to insure the establishment of a plantation. No rules for the cutting of such trees have been laid down at the present time, since a great many years will elapse before any cutting takes place, and it appears to be better judgment to leave the establishment of rules of cutting until such time as the timber may be ready to be cut. The free tree law



Mountain slopes in Eastern Adirondacks. Their thin forest covers show result of lumbering followed by forest fire. Black Forest on [illegible] summit, not lumbered. Large areas of virgin forest land on similar slopes recently have been acquired [illegible] similar conditions provides for the making of an agreement and filing copy of agreement in the county clerk's office of the county in which the land is located. Therefore, in order to secure trees under the provisions of this bill, application should be made far enough in advance so that there will be plenty of time to comply with the requirements of the law before the planting season.

Reforesting State Land. During the spring planting season 165,000 trees were planted on State land. The small number of trees planted was due to the fact that private land owners purchased the balance of the stock which was available for distribution during the spring planting season. No fall planting was undertaken on State land since the amount of three-year stock is limited, and it is safe to predict that all of this stock will be taken by private land owners during the spring planting season. During the fall of 1922, however, there will be a large quantity of stock suitable for reforesting State-owned land, and an increased appropriation will be necessary in order to maintain the nurseries at their present capacity and at the same time accomplish any great amount of reforesting on the Forest Preserve lands.



White pine trees with blister rust. Note the contracted irregular form where disease is present. This tree probably will die the coming year.

White Pine Blister Rust

Eradication work for checking and controlling the spread of the white pine blister rust has been in progress since 1916. During these five seasons the work has enlarged from a small sphere of experimentation to one of definite policies, due to information obtained in regard to the disease itself and methods of control.

The work for the season 1921 was done accordng to a program which included —

(1) Eradication of ribes on State and private land, using the accepted seven-crew method;

(2) Cooperation with private owners and one municipality in eradicating their pine lands;

(3) Demonstration field work and experiments to obtain data on (a) effectiveness of past complete eradication of ribes in control of the disease; (b) per cent of trees infected on different areas;

(4) Scouting of the entire State to determine exact situation in regard to spread and status of infection on the pine throughout the State;

(5) An educational campaign among pine-land owners by means of personal interviews, bulletins, illustrated publications;

(6) Pine survey to determine acreage and location of separate classes of young and mature pine in the white pine belt.

The white pine belt west of Lakes George and Champlain, containing about 1,000,000 acres was divided into four districts, each in charge of an agent who had several foremen in charge of the actual eradication work. At present the agents are making a survey of the disease on the pine throughout the State. During the winter months they are employed on pine survey and educational work among pine-land owners.

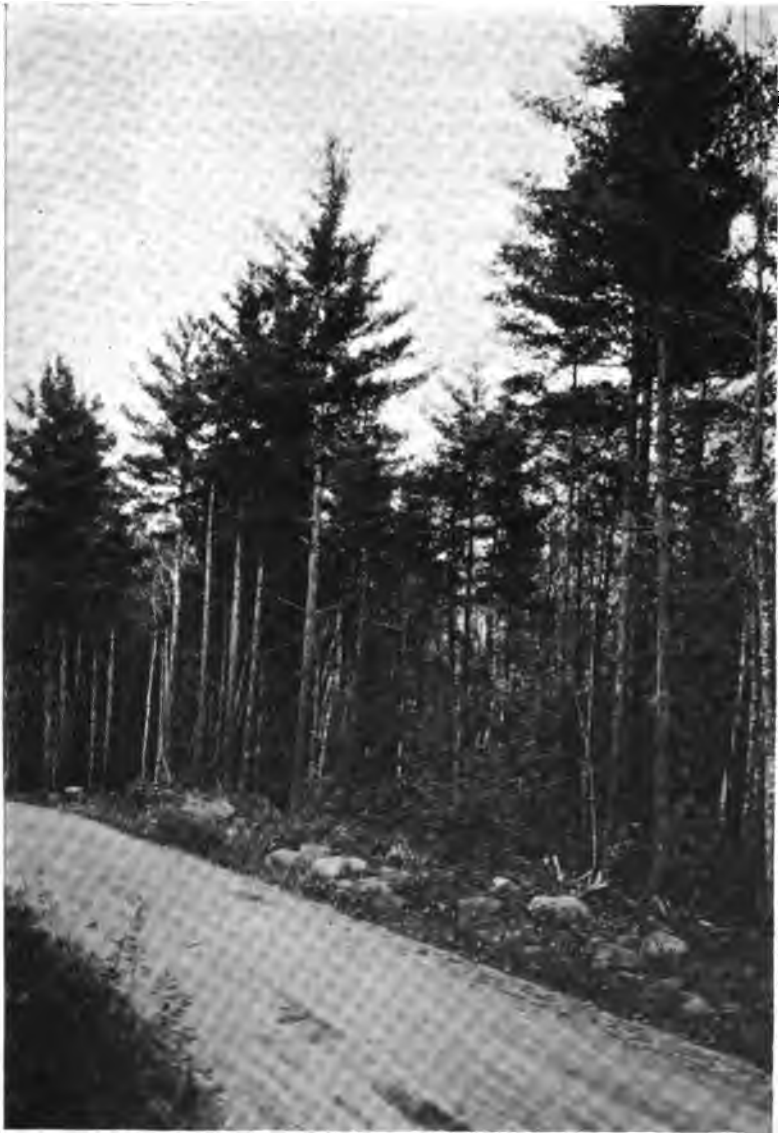
Eradication Work was done at various places on both State and private lands. On State land 448 acres were worked at Sugarbush; 247 acres at Goldsmith; 5,608 acres at North Hudson; 274 acres at Bolton and Hague; 521 acres at Wilmington; 1,090 acres at Axton and Cross Clearing. At all of these places there were plantations of white pine made from 3 to 18 years ago in sections where the gooseberry and currant bushes were numerous and in close proximity to the pine. Cooperative eradication was done at various places in Essex and Warren counties on private land where the owners paid for their proportionate part of the work. Work of this character covered 5,894 acres.

Checking. The effectiveness of control methods depends on as near complete eradication of gooseberries and currants as is possible in the field. To keep up efficiency of the field work, check inspections are necessary and checks were made which showed that 95.4 per cent of the bushes were removed the first time over. Inspections at various times behind the crews showed careful work done.

Educational. Work was done throughout the year by State and Federal men along educational lines. Wherever possible, landowners were taken to badly infected areas and shown the disease and its destructiveness on the ground. The most effective way of impressing the landowners with the extent, life history, and destructiveness of the disease is to actually get them onto a badly infected area. This has been done extensively at Jay, Wilmington, Willsboro, Lewis, Elizabethtown, North Hudson, Chestertown, Warrensburg, Bolton and Glens Falls. Early in the spring letters, reports and pamphlets were sent out to known landowners to acquaint them with all phases of the disease and methods of eradication throughout Warren and Essex counties.

Policy. Up to July 1, 1920, part of a Federal appropriation had been available each year for cooperative work with the State and private landowners for the eradication of gooseberries and currants (the alternate host of the disease in the dissemination of the spores which spread the disease. Since then the State has gone ahead with the work on a cooperative basis. However, considerable cooperative work was done previous to July 1st and some since then.

The State should continue to interest owners of pine land and cooperate in eradication work, but each year place a larger share of the actual eradication expense upon the individual. Gooseberry and currant bushes can be eradicated and thus the host of the rust removed. In a very few years, over a large area of the white pine belt of the State, unless eradication is done where the gooseberries and currants grow in close proximity to pine, the future supply of the white pine will be at an end, as the disease is very destructive and insidious in its development on the young growth. Observations this year show the disease to be obtaining a strong foothold in areas before only slightly infected. Up to this year but few areas had been seen



Natural white pine forest. This land was under cultivation thirty-five years ago, Town of Lewis, Essex County.

which showed impressively the destruction of young reproduction. The disease on young pine has now reached the stage where visible destruction of young pine under twenty-five feet high can be seen extensively. Unless the eradication of gooseberries and currants on pine land as a means of control is increased manyfold in this and the next few years, the reproduction of young growth will be cut off completely and the future of the white pine as a species seriously threatened. We will have lost one of our most valuable timber trees, a source of necessary lumber supply and a plant that is especially adapted to poor lands as a means of making them produce a valuable crop, and enabling these lands to be productive. Control work under present field methods of eradication will protect the pine and at a cost not prohibitive to any landowner.

Meeting of State Foresters

The second annual meeting of the Association of State Foresters was held in the Adirondacks, September 20, 21 and 22. State Forestry officials representing the states of Colorado, Oregon, Maine, Maryland, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, Vermont, Virginia, West Virginia and Wisconsin were present, together with officials of the United States Department of Agriculture, and the Province of Quebec. The first two days were spent in showing these foresters the white pine blister rust situation at points in Warren and Essex counties. On the third day an exhibition was given of our fire fighting protective system and observations made of the general forest conditions on the Hudson watershed. These foresters were convinced of the importance of strenuously fighting the white pine blister rust, and resolutions to that effect were adopted, asking not only for liberal State appropriations but also for Federal assistance in the work.

FOREST PRODUCTS

According to the requirements of the law, figures are herewith submitted showing the material manufactured by the mills in this State from the product of the New York State forests. The figures are for the year 1920, for the reason that it is possible to get these figures together only after several months work after the end of the calendar year; therefore, statistics of this kind are for the period one year prior to that covered by the report.

Lumber	*Feet*
Hemlock	78.154,000
Pine	68,279,000
Spruce	28.423,000
Balsam	1,067.000
Cedar	305.000
Tamarack	262.000
Maple	82,099.000
Beech	47,521.000
Birch	33,727,000
Oak	33.976.000
Chestnut	19.107,000
Basswood	16,278,000
Ash	9.768,000
Elm	8,357,000
Cherry	1,535.000
Poplar	1,438.000
Hickory	1,068,000
Cottonwood	784,000
Minor species	484.000
	432,632,000

Round Wood

Pulpwood		*Cords*
Spruce	387.533	
Balsam	50.899	
Hemlock	49.232	
Poplar	23,022	
Basswood	2,845	
		513.531

Wood for acid, excelsior, kilns, etc.	192.996
	*706.527
*Equivalent B. M.	387,883.323
Lumber	432.632.000
Grand Total	820,515,323

	Pieces
Shingles	5,630.000
Lath	13.484.000
Staves	27,173,600
Heading	11.376,240
Posts	82,895
Poles	30,975

Product, B. M. by years

Year	*Ft. B. M.*
1908	1.226,734.365
1909	1.091,164,710
1910	927,933.291
1911	972.396,695
1912	942.545,269
1913	851,391,367
1914	855,658,389
1915	804.142,388
1916	863,932,860
1917	861,870.781
1918	762,289,934
1919	709,666,528
1920	820.515.323

SUMMARY OF FOREST FIRE LOSSES, 1921 BY COUNTIES

COUNTY	Number of fires	Total acreage burned	Total expense of fighting fires	Acres private land burned				Acres state land burned				Value of standing timber destroyed	Value of logs, lumber, etc., destroyed	Value of buildings, fences, etc., destroyed
				Virgin timber	Second growth	Brush	Waste	Virgin timber	Second growth	Brush	Waste			
ADIRONDACKS														
Clinton	43	3,484	$4,996 14	4	820	1,312	240	.....	208	900	.....	$7,410	$350	$510
Essex	177	687	3,080 39	.....	305	167	106	2	57	50	.....	910	455	.....
Franklin	91	13,237	31,679 50	4	4,700	2,755	5,333	2	142	276	25	9,595	14,020	6,175
Fulton	7	10	86 02	.....	1	1	8	.....	.....	.....	.....	5	.....	.....
Hamilton	32	147	1,288 43	.....	4	45	41	1	5	20	31	110	.....	50
Herkimer	28	200	663 76	.....	65	85	17	.....	.....	32	1	220	.....	.....
Lewis	42	935	2,571 90	.....	481	377	77	.....	.....	.....	.....	1,310	.....	45
Oneida	8	17	9 90	.....	8	9	.....	.....	.....	.....	.....	.....	.....	10
St. Lawrence	113	3,278	11,611 96	1	328	1,126	750	.....	750	319	4	4,035	145	10
Saratoga	24	440	821 69	.....	249	125	66	.....	.....	.....	.....	225	.....	10
Warren	64	1,107	2,025 55	.....	773	204	129	1	.....	.....	.....	2,400	.....	.....
Washington	4	201	710 95	.....	136	50	15	.....	.....	.....	.....	700	15	.....
Total Adirondacks	633	23,743	$59,546 19	9	7,870	6,256	6,782	6	1,162	1,597	61	$26,920	$14,985	$6,810
CATSKILLS														
Delaware	31	473	$255 25	.....	147	235	91	.....	.....	.....	.....	$110	$55	.....
Greene	7	26	131 00	.....	14	5	7	.....	.....	.....	.....	90	.....	.....
Sullivan	6	120	134 80	.....	76	8	36	.....	.....	.....	.....	210	.....	$25
Ulster	49	2,301	2,745 64	.....	260	893	785	.....	110	253	.....	715	.....	.....
Total Catskills	93	2,920	$3,266 69	.....	497	1,141	919	.....	110	253	.....	$1,125	$55	$25
TOTALS														
Adirondacks	633	23,743	$59,546 19	9	7,870	6,256	6,782	6	1,162	1,597	61	$26,920	$14,985	$6,810
Catskills	93	2,920	3,266 69	.....	497	1,141	919	.....	110	253	.....	1,125	55	25
Grand totals	726	26,663	$62,812 88	9	8,367	7,397	7,701	6	1,272	1,850	61	$28,045	$15,040	$6,835

Total damage $49,920.

SUMMARY OF FOREST FIRE LOSSES, 1921 BY CAUSES

CAUSE	Number of fires	Total acreage burned	Acres private land burned				Acres State land burned				Value of standing timber destroyed	Value of logs, lumber, etc., destroyed	Value of buildings, fences, etc., destroyed
			Virgin timber	Second growth	Brush	Waste	Virgin timber	Second growth	Brush	Waste			
ADIRONDACKS													
Smokers	184	2,076	4	635	1,096	303	2	2	34	......	$3,485	$95	$45
Locomotives	98	372	......	216	127	29	......	......	......	......	420	....	....
Fishermen	116	9,078	4	2,094	1,389	5,238	1	106	216	30	6,160	12,800	150
Campers	66	5,230	1	3,252	1,324	534	1	77	41	......	5,270	800	6,020
Lightning	47	202	......	144	4	11	2	20	21	......	755	420	....
Burning brush	25	574	......	103	108	188	......	25	150	......	860	70	25
Berry pickers	18	1,085	......	121	597	165	......	......	202	......	1,375	15	....
Hunters	20	1,522	......	525	201	65	......	730	1	......	1,440	....	....
Incendiary	13	3,318	......	683	1,282	220	......	202	931	......	6,525	350	520
Burning buildings	14	20	......	*12	6	2	......	......	......	......	120	....	....
Lumberjacks	12	176	......	34	115	......	......	......	1	26	160	435	50
Children	8	9	......	6	2	1	......	......	......	......	30	....	....
Burning rubbish	4	40	......	10	......	25	......	......	......	5	20	....	....
Bee hunters	4	5	......	......	5	......	......	......	......	......	....	....	....
Fireworks	1	1	......	......	......	1	......	......	......	......	....	....	....
Transmission lines	1	35	......	35	......	......	......	......	......	......	300	....	....
Burning auto	1	*	......	......	......	......	......	......	......	......	....	....	....
Tractor	1	*	......	......	......	......	......	......	......	......	....	....	....
Total Adirondacks	633	23,743	9	7,870	6,256	6,782	6	1,162	1,597	61	$26,920	$14,985	$6,810
CATSKILLS													
Smokers	28	820	......	178	309	223	......	110	......	......	$640	$55	$25
Locomotives	29	473	......	105	276	92	......	......	......	......	50	....	....
Fishermen	2	4	......	......	......	4	......	......	......	......	....	....	....
Burning brush	13	104	......	60	27	17	......	......	......	......	125	....	....
Berry pickers	5	720	......	......	315	155	......	......	250	......	200	....	....
Hunters	6	64	......	54	4	6	......	......	......	......	10	....	....
Incendiary	4	725	......	100	205	420	......	......	......	......	100	....	....
Burning buildings	2	3	......	......	3	......	......	......	......	......	....	....	....

Children	1	2	......	......	2	......	......	......	......	......	....	....	....
Burning rubbish	2	4	......	......	......	1	......	......	3	......	....	....	....
Boiling sap	1	1	......	......	......	1	......	......	......	......	....	....	....
Total Catskills	93	2,920	......	497	1,141	919	......	110	253	......	$1,125	$55	$25
TOTALS													
Adirondacks	633	23,743	9	7,870	6,256	6,782	6	1,162	1,597	61	$26,920	$14,985	$6,810
Catskills	93	2,920	......	497	1,141	919	......	110	253	......	1,125	55	25
Grand totals	726	26,663	9	8,367	7,397	7,701	6	1,272	1,850	61	$28,045	$15,040	$6,835

*Less than one acre burned.

FIRES REPORTED FROM OBSERVATION STATIONS IN 1921, AND VISITORS REGISTERED

Stations	Fires Reported 1920	Fires Reported 1921	Visitors Registered 1921
Adams	4	4	48
Ampersand	8	39	1,044
Arab	2	34	308
Azure	7	40	365
Bald	21	54	173
Balsam Lake	6	10	182
Beaver Lake	8	27	150
Belfry	5	8	215
Belleayre	1	13	1,771
Black	4	19	1,755
Blue	21	13	2,956
Boreas	6	16	[illegible]
Cat	16	37	570
Catamount	18	37	240
Cathead	22	23	393
Crane	16	24	175
DeBar	3	50	135
Fort Noble	1	2	60
Gore	5	4	140
Hadley	20	24	175
Hamilton	25	6	700
High Point	19	20	171
Hunter	1	3	250
Hurricane	2	12	242
Kempshall	..	6	38
Loon Lake	5	43	73
Lyon	3	6	222
Makomis	6	8	275
Mohonk	16	13	..
Moosehead	17	56	161
Moose River	1	18	204
Mount Morris	7	23	629
Owlshead	14	18	772
Pharaoh	14	20	742
Poke-O-Moonshine	4	18	958
Prospect	15	38	1,670
Red Hill	3	12	410
Rondaxe	10	5	4,121
St. Regis	5	27	944
Snowy	14	5	833
Stillwater	21	27	84
Swede	7	10	354
T. Lake	4	..	467
Tomany	4	6	401
Tooley Pond	15	35	307
Tremper	3	9	930
Twadell	7	21	252
Vanderwhacker	6	14	96
Wakeley	7	1	55
West	7	3	592
Whiteface	..	31	1,062
Woodhull	11	5	264
Total	467	997	30,324
Long Island:			
Flanders	41	32	69
Telescope	143	105	185
Oakdale *	..	7	....
Grand total	670	1,141	30,578

* In operation part of season only.

FOREST FIRES, 1921

Summary by Months and Counties

COUNTY	Month											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
ADIRONDACKS												
Clinton	1	.....	.....	3	14	2	5	8	6	4	.....	43
Essex	.....	.....	3	26	30	26	21	38	25	8	.....	177
Franklin	.....	.....	.....	7	26	11	6	15	20	6	.....	91
Fulton	.....	.....	1	2	.....	2	.....	.....	2	.....	.....	7
Hamilton	.....	.....	.....	4	7	4	1	8	7	1	.....	32
Herkimer	.....	.....	.....	5	8	7	1	2	3	2	.....	28
Lewis	.....	.....	.....	5	16	6	3	4	8	.....	.....	42
Oneida	.....	.....	.....	2	5	.....	.....	1	.....	.....	.....	8
St. Lawrence	.....	.....	.....	6	38	14	20	24	6	5	.....	113
Saratoga	.....	.....	.....	10	3	4	.....	2	3	2	.....	24
Warren	.....	.....	1	13	18	10	3	3	13	3	.....	64
Washington	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	4
Total, Adirondacks	1	.....	5	83	165	90	60	105	93	31	.....	633
CATSKILLS												
Delaware	.....	.....	8	13	5	4	.....	.....	.....	1	.....	31
Greene	.....	.....	.....	4	.....	1	.....	1	.....	1	.....	7
Sullivan	.....	.....	1	3	1	.....	.....	1	.....	.....	.....	6
Ulster	.....	.....	3	16	3	13	3	4	1	6	.....	49
Total, Catskills	.....	.....	12	36	9	18	3	6	1	8	.....	93
TOTALS												
Adirondacks	1	.....	5	83	165	90	60	105	93	31	.....	633
Catskills	.....	.....	12	36	9	18	3	6	1	8	.....	93
Grand totals	1	.....	17	119	174	108	63	111	94	39	.....	726

RECOMMENDATIONS

It is recommended that in view of the double objects accomplished in the erection of public camp sites and the clearing of trails, namely, providing safer places for campers and at the same time opening up the Forest Preserve to the public, the appropriation for this kind of work should be continued.

Because of the high rates of wages existing in other kinds of employment, this Department recommended a few years ago that the rate of wages paid to fire fighters be increased. An amendment to the Conservation Law made by chapter 461 of the Laws of 1920, established the legal wages for fire fighters at thirty cents per hour, and of fire wardens and foremen at fifty cents per hour. Since this law went into effect there has been a decrease in wages paid in other lines of employment, and it is recommended that the law be amended to provide that fire fighters and fire wardens shall be paid at the rate of " not more than twenty-five cents and forty cents per hour. respectively." It is highly important that the wages paid for fire fighting be kept below the going rate of wages in other lines of work or there will be persons who will set fires for the purpose of securing employment fighting them.

Mention has been made in this report of the excellent work done by the gasoline forest fire pumps which were procured during the season of 1921. These outfits, complete, with 1,500 feet of hose, cost in the enighborhood of $800 each. The usual appropriations made for equipment are inadequate to permit the acquisition of a sufficient number of these pumps as rapidly as is advisable. We could profitably use one of these pumps for each of our sixty-five rangers. We now have only six pumps on hand. It is, therefore, recommended that specific appropriation for the purpose of acquiring these pumps be made available in sufficient amount to equip all the ranger force within the period of five years.

LANDS ACQUIRED

1921

Adirondack Preserve

ESSEX COUNTY

Essex Tract

Lot 195	115.50

Jay Tract

Lot 35.	390.00
Lot 36.	366.60
Lot 37.	380.70
Lot 38.	405.00
Lot 45, S. ½	195.00
Lot 46, S. ½	183.30

Old Military Tract

Townships 1 and 2

Richard's Survey

Lot 68, S. ½	544.50

Township 11

Lot, 51.	160.00
Lot 114, N. E. ¼	40.00
Lot 156, Ex. 70 a. N. W. cor	50.00
Lot 177, E. ½	50.00
Lot 196, S. W. ¼	30.00
Lot 372, S. E. cor	10.00
Lot 378, S. W. cor	30.00

Township 12

Richard's Survey

Lot 6, S. ½	720.00
Lot 11.	1,440.00
Lot 12.	843.60
Lot 19, S. ½	666.00
Lot 21.	818.12
Lot 22, subs. 22 to 28 inc	700.00
Lot 25.	645.32
Lot 26.	724.17
Lot 27.	1,440.00
Lot 28.	881.87
Lot 29.	860.62
Lot 35.	1,458.00
Lot 36, Ex. N. W. cor. of S. E. ¼	822.65

Township 12

Thorn's Survey

Lot 15, N. W. ¼	40.00
Lot 23, N. E. ¼ ex. 15 a. S. E. cor	25.00

Paradox Tract

Lot 143.	122.00
Lot 150.	160.00
Lot 151.	160.00
Lot 173.	152.00
Lot 247, Und. ⅞	144.59

Totten & Crossfield Purchase

Township 26

Lot 7.	220.00

Township 27

Thorn's Survey

Lot 15.	94.96

Township 49

Lot 14.	1,050.00
Lot 15.	1,050.00
Lot 20.	1,050.00

Whiteface Mountain Tract

Lot 3, ex. 4.13 a. mountain top	1,851.87
Lot 4.	2,599.87

FRANKLIN COUNTY

Old Military Tract

Township 10

Lot 142.	200.00
Lot 192, S. E. ¼	50.00

FULTON COUNTY

Glen, Bleecker & Lansing Patent

Lot 20, Ex. subs. 2 and 3	800.00
Lot 21, Sub. 5	139.00
Lot 31.	750.00

HAMILTON COUNTY

Arthurboro Patent

North Half

Lot 102.	226.00

South Half

Maxwell Tract

Lot 18, S. E. cor	50.00

Tefft (J. G.) Tract

Lot 2, E. part	100.00

Benson Township

Lot 10, N. ½	50.00
Lot 54, N. end	50.00
Lot 67, S. part	84.00
Lot 120, Ex. und. ¼ of 40 a. N. part	130.00
Lot 161.	160.00
Lot 173.	160.00
Lot 175.	160.00
Lot 176.	160.00
Lot 178.	160.00
Lot 212.	160.00

Bergen's Purchase

Patent 2

Mitchell lot	80.00

Moose River Tract

Township 8

N. E. Cor. Square	5,000.00

Oxbow Tract

Lot 239.	200.14

HERKIMER COUNTY

Nobleboro Patent

New Survey

Lot 63.	150.00
Lot 65.	150.00
Lot 66.	150.00

Old Survey

Lot 3, E. of W. branch of Black river	290.00

Woodhull Tract

Lot 11, All in Ohio	152.00

ST. LAWRENCE COUNTY

Macomb's Purchase

Great Tract 3

Township 14

N. E. ¼

Lot 7.	224.68
Lot 8.	201.45
Lot 11, Ex. 8.46 a. W. side	194.50
Lot 12.	225.40
Lot 13.	223.47
Lot 14.	203.28
Lot 15.	204.00
Lot 16.	199.98
Lot 17.	199.68
Lot 18.	221.48
Lot 19.	225.00
Lot 20.	201.55
Lot 21.	200.58
Lot 22.	200.14
Lot 23.	201.56
Lot 24.	224.00
Lot 25.	196.80
Lot 26.	179.22
Lot 27.	180.72
Lot 28.	225.42
Lot 29.	223.68
Lot 30.	245.28
Lot 31.	245.75
Lot 32.	220.68
Lot 33.	219.42
Lot 34.	230.64
Lot 35.	225.62
Lot 36.	245.00

Township 10

N. W. ¼

North half, N. E. part	3,475.10

WARREN COUNTY

Dartmouth Patent

Great Tract

Range 9

Lot 9.		234.00

Range 10

Lot 5,	N. W. cor	40.00
Lot 5,	S. ½	117.00

Gore between Dartmouth Patent and Township 11, Totten & Crossfield Purchase

Lot 5,	All in Johnsburgh	134.00
Lot 6.		160.00

Palmer's Purchase

Rear Division

Great Lot 1

Lot 45,		80.00
Lot 46,	All in Thurman	24.47
Lot 47.		160.00
Lot 48.		115.00
Lot 50.		160.00
Lot 51.		156.65
Lot 52.		80.00

Totten & Crossfield Purchase

Gore between Townships 29 and 31

Lot 11.		169.60
Lot 12.		169.60

Township 11

Lot 8,	S. E. cor	75.00

Catskill Preserve

GREENE COUNTY

Hardenburgh Patent

Great Lot 22

South Township

Lot 2.		154.75
Lot 20.		122.50
Lot 54.		110.75
Lot 75,	N. W. part	75.00

Great Lot 24

West Half

Central Part, B'd E. by E. Half of Lot, N. by State and by Beecher, W'ly by Great Lot 23	1,217.10
East Part, B'd N., S. and W. by State	25.70
East Part, B'd E., N. and W. by State	26.00

Great Lot 25

East Half

East Part, B'd N. E'ly by Lots 116, 117 and 118	226.28
Lot 130, S. part, B'd N. by State	615.40
Lot 135.	105.63

Great Lot 26

Division 1

Lot 3, All in Greene Co	250.00
Lots 4 and 5, All in Greene Co. ex. Olcott and Martin parcels in W. end	487.53

Division 2

All in Greene Co. ex. 1 parcel in E. end and 1 parcel S. side	1,646.21

Division 3

Lot 2, W. end	43.60
Lot 5, S. end	49.42
Lot 6.	123.00
Lot 7, All in Greene Co	212.54
Lot 18, N. end	83.07
Lot 19, All in Greene Co	250.21

Division 4

Lot 3.	127.70
Lot 8.	131.25
Lot 9.	239.03
Lot 13.	142.38
Lot 14.	143.84
Lot 15.	122.54
Lot 16.	122.10
Lot 17.	123.76

Division 5

Lot 3.	123.84
Lot 4.	117.45
Lot 5.	119.05
Lot 6.	126.90
Lot 9.	206.61
Lot 11.	124.72
Lot 12.	126.00
Lot 13.	107.34
Lot 14.	106.95
Lot 16.	115.56

State Land Tract

Lot 14.	149.00
Lot 18, N. W. part	87.60
Lot 25, W. ½	101.00
Lot 26, E. of Brook	137.00

ULSTER COUNTY

Hardenburgh Patent

Great Lot 6

Connecticut Tract

Lot 21.	112.00

Denning Tract

Lot 82.	160.00
Lot 83, Ex. 17.44 a. S. W. cor	142.56
Lot 99.	160.00

Great Lot 7

South Half

10,000 Acre Tract

Krum Lot, E. part ex. 75 a. S. E. cor	502.40

Great Lots 7 and 10

Darling's First Survey

Lot 33.	160.00

Great Lot 8

Allotment North of Beaver Creek

Lot 6, Sub. 2	138.35
Lot 6, Sub. 3	96.20
Lot 6, Sub. 4	113.03
Lot 6, Sub. 5. E. end	117.04

Duer Tract

Lot 36.	109.00
Lot 44.	109.00

Great Lot 25

Gauld Lot, B'd W. by Lot 112	120.03

Rochester Patent

Mary Elmendorf Tract

Lots 3 and 4, Parcel in	1,140.20

SCHOOL DISTRICT REFORESTATION

The privilege of acquiring lands for forestry purposes which is now extended to school districts under the Conservation Law, makes possible the profitable utilization of many acres of land now entirely nonproductive, and the stimulation of interest in the science of forestry among school children who could apply the knowledge, a little later, on the home farm with profit to themselves and benefit to the State.

The Conservation Law provides that a city, town or school district may acquire by purchase or gift or take over lands in its possession, and use the same for forestry purposes.

The governing board of the county, city, town or school district may appropriate money or issue bonds either for the purchase of lands to establish forest plantations or for the care of forests. Such boards are empowered to undertake such work at regular or special meetings by majority vote after two weeks' public notice, setting forth the fact that such a plan is contemplated, and that money is to be appropriated for such purpose.

Tree planting is becoming part of the school curriculum in many places.

The law authorizes the Conservation Commission to assist and advise such boards in reforesting work, and to furnish trees for reforesting such publicly-owned lands without charge, provided they are planted in accordance with instructions of the Commission.

The law further provides that the net income from such lands shall be paid into the general fund of such municipal divisions, and shall be used only upon order of its governing board.

The best uses of our forest resources and natural forest lands can be gained only through careful education of the public in regard to the need which exists in order to furnish a sufficient supply of lumber for the future.

In the town of Constable, Franklin county, ten acres were donated to the school district, and under the direction of the Farm Bureau agent the children, during last year and this, have planted 10,000 trees on these ten acres — half white pine and half Scotch pine. The land has been fenced by the district.

Need of Scientific Forestry

The practice of scientific forestry in the United States has not in the past appealed strongly to lumbermen or timberland owners because of the fact that cheap areas of standing trees have always been available. Without a definite or comprehensive policy for the future, most of them have seen no reason why the production of a second crop of timber should trouble them as long as untouched areas could be purchased for less money than it would cost to produce a new forest crop — to say nothing of the length of time required to produce it. Furthermore, they are not inclined to allow the cutting or removal of timber to be hampered by sparing the smaller trees, a practice which would probably give a second cut of timber within the next twenty-five or thirty years, but which means nothing more to the present operator than an immediate market loss of any timber he leaves standing. The presence of cheaper timber in other localities has encouraged the lumberman to make a "clean job" of each of his operations and then move elsewhere.

Men and Women in Planting Gangs.

The principal centers of supply for lumber are now the southern states, the Lake states, the Pacific Coast, Canada and Alaska. When these sources of wood and lumber are exhausted, the industries using wood materials must turn back to the cut-over lands for whatever wood supplies have chanced to grow upon them or else produce lumber by reforesting.

Communal Forests

The establishment of communal forests is one important way in which provision may be made for a future supply of wood products. The idea of public forests is rather new in this country. Although a certain amount of reforestation and scientific woodlot management has been performed by State agencies and individual landowners, the possibilities of a practical forestry undertaking as an industry in a community are only just beginning to be appreciated. The greatest obstacle seems to lie in arousing the interest of a sufficient number of people in the project and getting the plan started.

Nearly every locality in New York State has large or small tracts of idle or nonagricultural lands. They are not producing any material income: in fact, they are usually held by their owners at a loss through nonincome on investment and outgo due to taxes. These areas, if they are situated reasonably close to settled districts, and are, therefore, capable of supervision, accessible for operation and near to means of transportation, could, under a system of scientific forest development, be converted into a definite community asset.

Evergreen trees grow slowly during the first years. Seed beds of one-year old trees in the Saratoga State Nursery. These beds average more than five thousand trees each.

Town Forests Profitable. Practically every country in Europe has tested out the town forest and found it a profitable investment. In addition, the town forest is a local industry. The city of Zurich, Switzerland, employs regularly one man for every thirty-three acres of its forest, and in the winter and times of industrial depression it employs more. Many small towns in Europe have no taxes to pay, and in some cases the citizens receive a dividend from the forest. The desirability of receiving a check instead of a tax bill is too obvious to call for comment.

The oldest artificially planted forest in Europe is the Frankfort Town forest. Scotch pine trees planted there 200 years ago have reached diameters of thirty-six inches, and a single tree, when cut, has yielded as much as 4,100 board feet of lumber. White pine and Norway spruce planted in mixture have yielded, when sixty years of age, at the rate of 35,000 board feet per acre.

It is not necessary that communal forests be started by the planting of trees. In most localities, woodlands can be purchased at a relatively low figure, which are already fairly well stocked with second growth and may also contain a considerable number of merchantable trees which are suitable for fuel or for other purposes. In acquiring such areas, therefore, the municipality might be able to secure enough revenue from the administration of the forest to pay the cost of operating it. At the same time, new trees could be introduced, in order to fill up all available ground and thus secure a completely stocked stand.

Planting Denuded Land. Land which has been competely denuded of timber growth can be returned to forest production by planting the proper number of small trees. The trees must be so spaced that each will have all of the soil, moisture, air and sunshine which it can profitably use. In practice, this has been found to be at a distance of about six feet apart each way, which will require about 1,200 trees per acre. The Conservation Commission maintains nurseries for the production of such trees in various localities in the State. Trees grown in these nurseries are sold for reforesting privately-owned lands at cost of production, and for reforesting publicly-owned lands at the nominal price of fifty cents per thousand trees. Under the provisions of a bill passed by the 1920 session of the Legislature, seedling trees become available for free distribution in 1922.

Evergreen Seedlings From Two Years of Age are Transplanted to Aid in the Better Development of Their Root Systems.

The actual work of planting is simple and can be done successfully and readily by anyone. It is best done by two persons working as a team, one with a grub hoe to make holes, the other with a pail of trees to do the planting. Such a team, if active, can plant 1,000 trees a day.

After about ten years the trees will have developed so that the side branches commence to interlace, and other vegetation upon the ground is killed by the shade. The tree then begins to have full use of the soil. As soon as the side branches are interlaced, the light is gradually cut off from the sides of the trees and the lower branches are shaded and die. The forest is, therefore, self pruning, the stems of the trees contain a minimum number of knots, and the trees grow straight and tall. The result is that the tree when cut yields a high grade of lumber.

Income from Sale of Timber. The principal advantages derived are a perpetual income from the sale of timber, employment of persons in connection with the cutting and sale of timber, and the benefits that come from a forest cover. These latter benefits are not to be discounted; they include the regulation of the run-off of streams, the prevention of snow slides and earth slides, shelter from winds, protection to birds, game and fish, and a beautiful and healthful playground for old and young.

Three-year old transplants of Scotch Pine being pulled and made ready for shipment.

The following is a concrete example of how a community forest might be useful in defraying the taxes of a town or school district. The cost of maintaining a one-room school in most of our rural districts is from $800 to $1,200 per year. White pine plantations have been found to yield 40,000 board feet of lumber per acre when 40 years old, or an average of 1,000 board feet of lumber per acre each year. In such a case, a forest of from 60 to 80 acres in area would produce an annual yield of from 60,000 to 80,000 board feet of lumber, having a stumpage value of about $15.00 per thousand board feet or a total value of from $900 to $1,200. Or in other words, a school forest would make the school self-supporting after the first trees planted had come to maturity. In a large majority of our rural school districts there is more than twice this area of idle land which could be used for forestry purposes. Such a forest can be established by planting from one and one-half to two acres of land to young forest trees each year for a period of forty years. All the work of planting in a proposition of this size could be done by the school children in connection with their Arbor Day exercises, or a planting team of two men could supplement the work of the school children and plant six acres in a week, if quicker results were desired.

The State Conservation Commission is urging upon local school boards throughout the rural sections of the State the great need of putting into effect a program similar to that outlined above. A small tract of woodland operated in connection with a school would offer many advantages along educational lines other than teaching the principles of forestry. It would afford a place for field excursions in nature study, biology and botany, and if conveniently located, could become a community center for picnics and local gatherings.

A Good Start in the Production of Marketable White Pine Lumber has Been Attained in Twenty-one Years, Dutchess County, N. Y.

Many Advantages of a School Forest

The lessons learned in reforesting in this school forest would soon be put into practice on the home farms of the school children, and the interest of the farmers and land-owners in the vicinity would be aroused. Many of the idle lands throughout the State are included within the area of our farms, and by developing interest among the many farmers in this way, great results can be accomplished, if only a little is done by each one of them.

A forest under proper management will maintain the fertility in the soil, and even increase it by adding large quantities of leaf mould and litter. Practically all the mineral plant foods taken up from the soil by the tree roots are returned to it again in the fallen leaves. What other industry can our cities, towns and villages build up, which, when finally established, will not only be self-supporting, but will yield a fair profit year after year without any diminution of the supply of raw materials used?

Planting Seasons. There are two seasons of the year when plantations of forest trees may be made. In New York State the first season begins in the latter part of March on Long Island, and continues often as late as

May 25 in the Adirondacks. Spring planting should be done before the buds have begun to make new growth. When trees are moved from a warm locality to a colder one for planting, the new bud growth often gets well started before the ground in which the trees are to be planted is ready to receive them. The reverse is true when the trees are moved to a warmer place for planting, since here the soil is ready long before the frost is out of the ground in which the trees have grown. For these reasons it is decidedly advantageous to have planting stock grown in the vicinity where the planting is to be done.

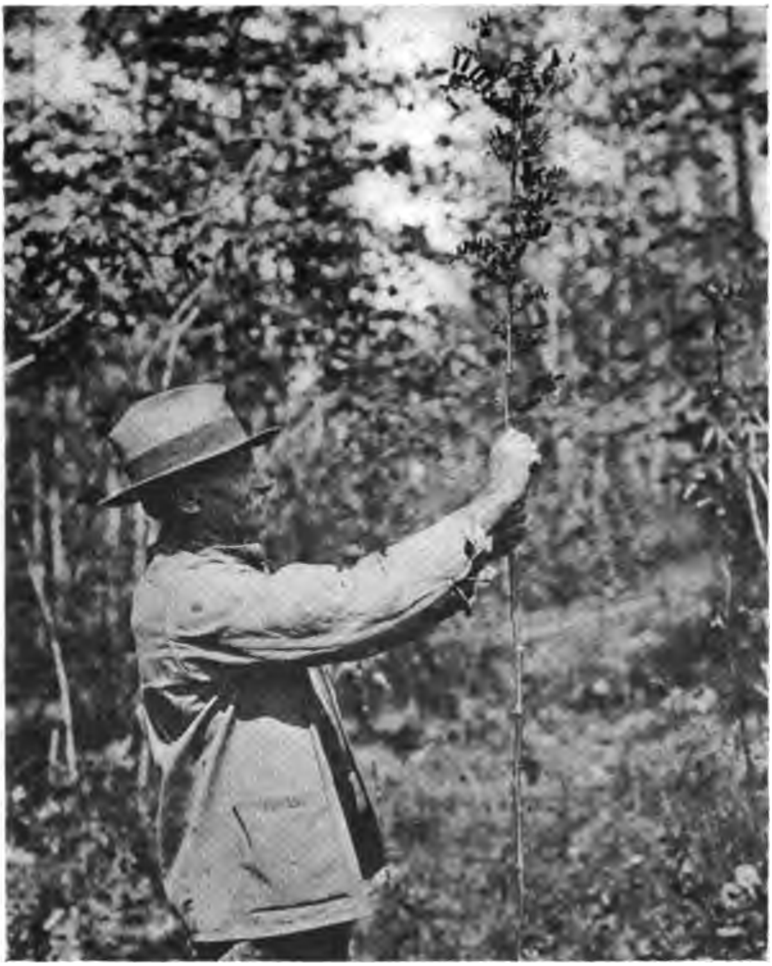
As a general rule, spring planting should be done as soon as the soil is sufficiently dry to be worked. On Long Island and in the southeastern part of New York State, this is about the last week of March and the first week of April. In the Adirondacks and the northern parts of the State it is usually not possible to begin planting before the last week of April.

A high yield of pulpwood per acre can be secured from this plantation of Norway Spruce at the age of twenty-eight years, Dutchess County, N. Y.

The fall planting season begins about the first of September in northern New York and ends about the last of October in southern New York and Long Island. In planting conifers in the fall, only transplanted stock three or four years old should be used; with seedling stock much loss may result from heaving of the soil. Hardwood species to be planted in the fall should not be moved until after the leaves have fallen.

In spring early planting is to be preferred in order that the trees may have the benefit of the spring rains. If planting is done too early in the fall, however, the trees may suffer from subsequent dry weather. But fall planting should be done early enough so that the soil will become well compacted about the roots by the autumn rains before the ground freezes; late fall planting is likely to result in heaving of the trees during the winter and early spring.

Trees that show a tendency to start their new growth very early in the spring — for example, the European larch — should preferably be planted in the fall.



This Farmer is Replenishing his Fence Post Material. Remarkable Growth Attained by Black Locust at the Age of Two Years.

Dividing the planting between the spring and fall seasons is often advantageous when sufficient labor cannot be obtained to do the required work in the short space of time afforded in only one planting season.

Kinds of Trees to be Used. There are a large number of species of trees that may be used for forest planting. For commercial purposes, however and for supplying materials needed for domestic use on the farm, only a few species are of real value. For New York State the most rapidly growing species and those giving the most valuable product are:

Conifers

White pine (Pinus strobus)
Norway spruce (Picea excelsa)
Red pine (Pinus resinosa)
Scotch pine (Pinus sylvestris)
European larch (Larix europaea)
White cedar (Thuya occidentalis)

Hardwoods

White ash (Fraxinus americana)
Red oak (Quercus rubra)
Black locust (Robinia pseudacacia)
Black walnut (Juglans nigra)
Tulip tree (Liriodendron tulipifera)
Basswood (Tilia americana)

Carolina poplar (Populus deltoides var.)

Soil Types to which Different Tree Species are Adapted. In general the different species of pine require sandy soils or sandy loam. European larch does well on upland loam soil, while white cedar thrives best in low, moist situations. Norway spruce does best on a heavy loam or clay soil. Hardwoods are best adapted to the better loam soils and clay soils. The trees best suited for growth in various soils are as follows:

Dry sandy soil

Scotch pine
Red pine
Black locust
Carolina poplar

Moist sand or sandy loam

White pine
European larch
White cedar
Black locust
Carolina poplar

Moist loam or clay loam

Norway spruce
White cedar
White ash
Black walnut
Tulip tree
Basswood
Black locust
Carolina poplar
Red oak

DIVISION OF SARATOGA SPRINGS

DIVISION OF SARATOGA SPRINGS

J. G. Jones	Superintendent
C. B. Elmore	Secretary
Herbert Ant	Chemist

DIVISION OF SARATOGA SPRINGS

Greater Economy of Operation

The year just passed has been the best, in point of patronage, that the State Reservation at Saratoga Springs has ever experienced. Receipts from the bath houses during the cure season 1920–21 exceeded those of the previous year by nearly 23 per cent, and were the largest in our history. During the past season it has been possible to operate all the plants under our control with considerable more economy than in years past, due to a perfected organization, and to greater efficiency of labor. This constant increase in patronage from year to year points to a very satisfactory future for this division. The bathing business has passed the point where the cost of operation increases equally with the amount of patronage, and from now on considerably more profitable seasons may be looked for if no drop in the number of patients treated is experienced.

The following table shows the results of the operation of the Lincoln, Washington and Saratoga bath houses from July 1, 1921. to October 31, 1921, in which a deduction of $8,000 has been made from the estimated profits to cover the cost of repairs to be made to the bath houses before they are opened for next season:

	Lincoln	*Washington*	*Saratoga*
INCOME			
Receipts	$25,811 25	$17,258 48	$17,903 66
EXPENSE			
Fuel, light, power, water	$5,475 91	$3,646 86	$1,889 53
Supplies	452 51	290 46	483 51
Wages	5,944 97	5,576 52	5.807 01
Repairs	330 41	45 62	205 96
Laundry	1,797 54	1,348 16	1,348 16
Busses and trucking	895 13	684 58	340 47
Office	211 31	158 48	158 48
Est. repairs and painting before opening for next season	2,500 00	1.500 00	4,000 00
Total expense (estimated)	$17,607 78	$13.200 68	$14,233 12
Estimated profits	$8,203 47	$4,057 80	$3,670 54
Total for the three bath houses			$15,931 81

The above figures. it must be understood, are estimated so far as the cost of repairs and painting to put the bath houses in shape for next season are concerned. An allowance of $8,000 has been made in the above table to cover the estimated cost of this work so that the total estimated profits of the bath houses, as given in the table, will be increased or decreased by just the amount that the cost of repairs underrun or exceed the $8,000 estimated to cover this work. These expenses will be incurred during the present fiscal year and therefore should be considered in this connection.

Despite the fact that the water bottling business is being operated by a private corporation, under lease from the State, and despite the expenses and losses incident to the closing out of the Reservation's control of this business, a profit was realized from the income-producing departments of this division, amounting to $1,617.22. Among the items which tended to reduce the amount of this profit was a payment of $600 to our former Albany agent for bottled waters, because of his loss of business on account of the change in control and operation of the mineral water plants. A loss of approximately $1,100 was sustained in getting rid of our stock of bottling supplies after the waters lease went into effect, as nearly all this material had dropped in price since purchased by us. During the war period, pure drinking water was supplied to the Arsenal at Watervliet by this department. An endeavor was made to give a price on this water which was very near our cost for supplying it, but, because of two freight rate increases after the contract was made, the allowance which had been made in our cost figures for breakage was overcome. Thus, when the business was closed up early in the past fiscal year a loss of about $1,000 incurred in this war emergency had to be written off.

During the coming winter it is expected that approximately $10,000 in operating expenses will be saved by the closing of the Saratoga bath house for alterations and repairs. This bath house has been operated during the past few winters largely as an advertising proposition, and at a considerable loss; the amount of receipts being nowhere near large enough to pay the cost of operation.

View of the Avenue of Pines.

The alterations to this bath house will meet the requirements of physicians by providing a place where only patients being treated under prescriptions will be accommodated and where the patients will be assured at all times of competent attendance and proper medical supervision.

Parks and Roads. Owing to the small appropriation granted by the Legislature of 1921 for the maintenance of our 500 acres of park and eight miles of roads, it was impossible to carry out, during the past year, all of the work anticipated. The main road at the southern end of Geyser Park, which had been washed out over a year ago, by the breaking of the Geyser dam, was temporarily repaired and made passable for automobile traffic. This road, however, should be carried to its original width and resurfaced throughout. The same is true of a great many of the roads through Geyser Park, and a number of complaints on the condition of these roads have been entered at the Conservation Commission's offices at Saratoga Springs during the past season. The road from the Karista spring to Hathorn No. 2 spring and the Schenectady highway, which was proposed in the last annual report, could not be built because of lack of funds. A considerable amount of excavation was completed for this road, however, in taking gravel for the resurfacing of a portion of the "Avenue of Pines." This work of resurfacing was carried out to about 80 per cent of the total length of the Avenue, and all of the heavy summer traffic on the State highway was diverted to our road by a resurfacing job of the City of Saratoga Springs on Ballston Avenue. By the use of calcium chloride to lay the dust and a weekly scraping with a road hone, the Avenue of Pines stood up remarkably well under the large amount of traffic over the main north and south route.

Between the Hathorn No. 3 and Coesa springs, the shoulder of the road was widened about 12 feet to the east over culvert extensions which were put in by the State Highway Department. The west side of this stretch of road was also widened somewhat, thus allowing considerable more parking space and relieving the congestion of vehicles for tourists who stop to drink at these very popular springs.

A large amount of transplanting was done in the "Vale of Springs" in Geyser Park, and the old stone foundation walls about Champion No. 3 spring were leveled, which with a considerable amount of drainage has added this little valley to the beauty spots of the Reservation. Additional concrete settees and new concrete picnic tables have been placed in High Rock Park, in Geyser Park, near the Minnonebe spring, and near the Ferndell ravine. These tables are similar to those used at the Palisades Interstate Park and have proved to be a great convenience to picnickers and visitors.

Concrete sidewalk was laid on Phila street, west of Putnam street, thus completing the concrete walks leading to the Lincoln spring drinking fountain at the corner of Spring and Putnam streets. A considerable amount of concrete sidewalk was laid about the Lincoln swimming pool, doing away, to a large extent, with the tracking of sand and grass into these pools, thus making the work of maintaining them easier and less expensive.

The lawns at the west and south of the Washington bath house were roughly graded and trees and shrubbery set out to make these spots more attractive, until such time as an appropriation can be obtained for the proper grading and seeding of these lawns.

Wells and Springs. During the year constant inspection and control of the various wells and springs has been carried on, as usual. A very large number of water level readings and flow readings have been taken and tabulated. During the year, Champion No. 1, Clarke No. 2, Emperor, Geyser, Lincoln No. 8, and Natural No. 7 wells have been properly retubed and resealed. During the fall of 1921, it was necessary to retube the Hayes well, which is used to supply water to one of the separators of the carbonic acid gas compressing plant.

A new marble and granite fountain was installed at the Congress spring in Congress Park. This fountain has four outlets and affords better accommodations to the large number of visitors who take this water, besides improving the appearance of the Congress sunken garden. Free service of water was supplied throughout the year at the Old Red, Emperor, Peerless, Hathorn No. 1, Coesa, Clarke No. 2, Hayes, Polaris, and Ferndell springs. Four free service drinking fountains were provided for the popular Lincoln water.

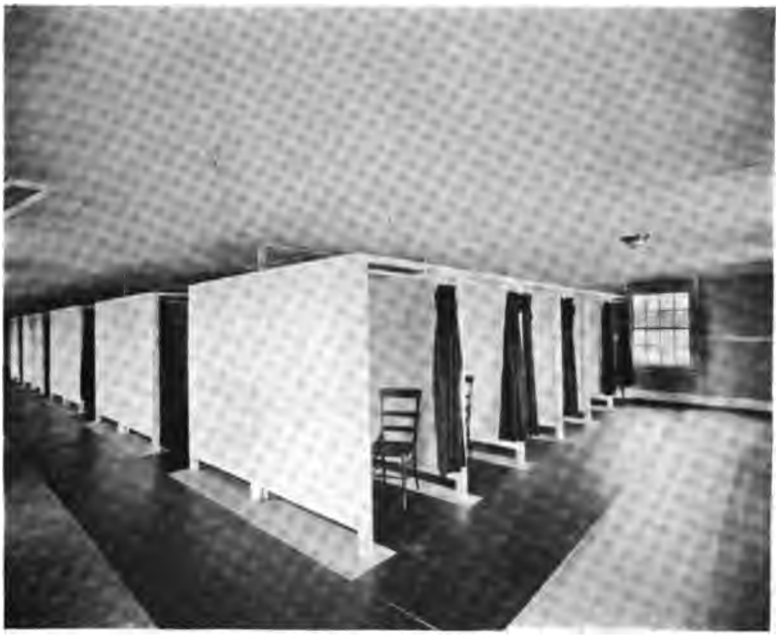
Large Increase in Business

During the fall of 1920 and winter of 1921, the work of altering and remodeling the second floor of the Lincoln bath house and the installing of bathing equipment there was completed. The second floor was supported by steel "I" beams and iron columns on concrete piers. A concrete floor was laid on which were placed twenty-eight bath rooms, with all equipment for the giving of mineral water baths. These bath rooms were built in the center of the south wing of the bath house and arranged with a wide corridor on all four sides, providing excellent light and ventilation in this wing. In the north wing of the bath house fifty-three dressing rooms were installed with proper toilet facilities. A new and wider stairway was constructed, leading from the main hallway downstairs to a large reception hall on the second floor. From this reception hall wide doorways lead to the bath rooms and to the dressing rooms, already mentioned, and to a large airy rest room in the front wing of the building. Additional ventilators were provided on the roof of this bath house, making this second floor addition as cool and airy as any of our bath houses. The results of its operation, during the past season, have already proved its popularity.

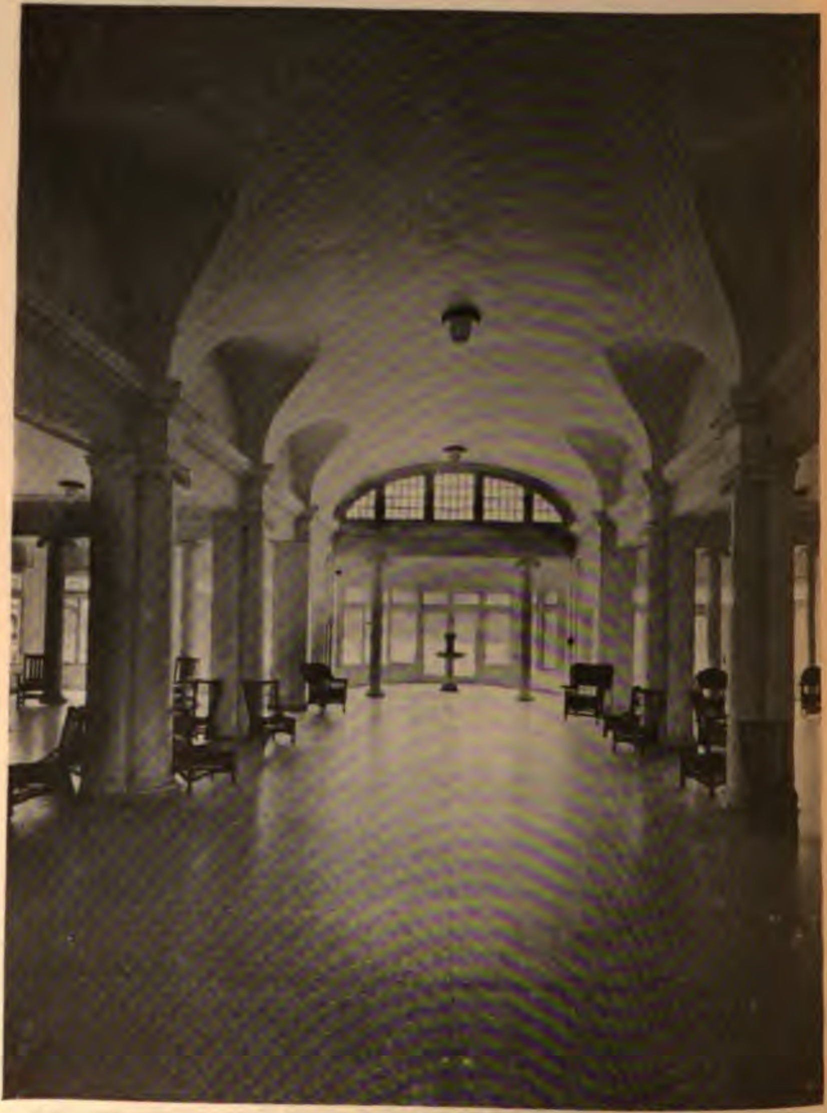
Rest Room, Upper Floor, Lincoln Baths.

During the season of 1920, 19,104 treatments were given at the Lincoln bath house, while in 1921, 28,140 were given, an increase of 9,636 treatments, or 50.4 per cent. As the Lincoln bath house was crowded to capacity during the season of 1920, all of these additional treatments were made possible by the second floor installation. The cost of this increase, in accommodations at the Lincoln bath house, was approximately $18,000. The increase in the gross receipts at the Lincoln bath house during the present season was $8,950.20, proving it to have been a thoroughly profitable investment. The total treatments given in all bath houses during the first nine months of the calendar years 1920 and 1921 increased from 52,558 to 58,998, or about 12 per cent. When business conditions throughout the country are taken into consideration, we believe this to be a very satisfactory increase. The receipts from baths for the first three months of the fiscal year 1921–22 increased from $49.588.77 to $59,963.98, an increase of 22.9 per cent.

At the Saratoga bath house, a great deal of difficulty has been experienced during the past year, because of the Turkish bath hot rooms which are located on the first floor of the building. It is necessary to run some of the mineral water supply and waste pipes through these rooms, and the intense heat causes a building up of the mineral content of the water on the inside of the pipes with a consequent stoppage of the flow. In some cases, it is necessary to clean out these pipes several times a year, causing a great deal of trouble and inconvenience during the season. It is proposed, and plans have been prepared by the State Architect to rearrange the first floor of this bath house, doing away with the hot rooms, mentioned above, and substituting for them, electric and hot air cabinets. These cabinets will be placed in a room which will be provided by flooring over the large plunge in the rear of the first floor of the bath house. The receipts from the use of this plunge have never provided an adequate return for its maintenance, and by the constructing of an extra room at this point, it will be possible to provide two suitable rooms for hydrotherapeutic installation, one on the men's side and the other on the women's side. Here will be placed the cabinets, mentioned above, douche stalls, control tables, shampoo tables, and all the equipment to equal that provided for special treatments at the new Washington bath house. In place of the present hot rooms, there will be installed three mineral tubs each on the men's and women's sides and one colon irrigation room on each side. These changes have been requested for sometime by the local physicians, in order that they may have a bath house in which only patients being treated under prescription from physicians will be accommodated, and where they may keep these patients under proper medical supervision, with the assurance of competent attendance and good accommodations.



Dressing Rooms, Upper Floor, Lincoln Baths.



View of rotunda, Washington Bath House, looking west.

These changes will also enable us to run the Saratoga bath house during the winter months at a much smaller cost than formerly, because the entire upper floor, now devoted to mineral water treatments, could be shut off for the winter and the small number of mineral treatments given during these months, could be accommodated in the tubs provided on the first floor. This will do away with the necessity of maintaining several extra attendants and will also reduce, by a large amount, the cost of heating the building. These changes will, if completely carried out as the doctors request, reduce our capacity for mineral water baths by a considerable percentage, if no patients but those having prescriptions from physicians are accommodated at the Saratoga baths. This will undoubtedly tend toward overcrowding at the Lincoln and Washington bath houses.

Engineering Department. All technical matters are handled by this Department, and construction and repair work of every kind is laid out and supervised.

During the year the installation of an additional 150 horse-power water tube boiler at the Washington power house was completed, and this boiler was in use throughout the 1921 season. The capacity of the low pressure side of the mineral water supply system was increased approximately 25 per cent, and the high pressure capacity was increased 50 per cent by the addition of a third duplex compound high pressure mineral water pump connected to draw from the 16,000 gallon tank in the Washington power house, which had previously been used as a high pressure tank. This change doubles the low pressure storage of mineral water for the bath houses, and enables us at all times to adequately supply every need of the three bath houses during the past season.

At the Lincoln No. 8 well, which is part of the mineral supply system, a new concrete pump pit was constructed entirely under ground and a large steam driven deep well pump put into operation here. This work removed from the space between the Lincoln and Washington bath houses the unsightly pump house which it had previously been necessary to maintain there. The installation of this steam driven pump also assisted in the increase of the low pressure mineral water capacity, mentioned above. At the same time, arrangements were completed for the use of Natural Carbonic Well No. 8, should this at any time be found necessary in maintaining an adequate supply of mineral water to the bath houses.

Throughout the piping system for mineral water the extra heavy wrought iron pipe formerly used is being gradually replaced with cast iron pipe laid with universal joints. It has been found that the life of this cast iron pipe in mineral water work far exceeds that of wrought iron. It can be laid as cheaply as wrought iron pipe, and the initial cost of the pipe itself is only a little greater.

In this connection it is well to call attention again to the fact that the four-inch wooden line pipe from the Lincoln tract to the Saratoga bath house and to the free service stations in the city of Saratoga Springs is in very bad condition. The maintenance cost of this line is high because of frequent breaks and leaks. A new cast iron line between these points would do away entirely with this maintenance cost for a great many years, and would obviate the necessity of operating a pressure pumping station at the Saratoga bath house, because a pressure of 80 to 100 pounds could be maintained on this new line, whereas 30 pounds is the highest pressure which the present wooden line will withstand.

The piping system for the disposal of waste mineral bath water from the Lincoln and Washington bath houses was materially increased in size before the 1921 season and should again be increased during the coming year to take care of the enormous amount of waste water which flows from these bath houses during a few hours daily. About 400 feet of tile sewer connecting the sanitary sewage system at the Lincoln and Washington bath houses with the city sewer was replaced with cast iron pipe and it is planned to continue these replacements as needed until the whole line is constructed of cast iron.

The line of copper steel pipe from Hathorn No. 2 and Coesa springs to the Geyser bottling works was taken up during the year and the one and one-fourth inch porcelain enameled lined pipe, which has been in stock for this purpose for a number of months, was laid in its place. In the operation it was possible to salvage for future use a considerable amount of three-fourth inch copper steel pipe and also a large amount of two-inch wooden pipe which was laid some years ago by the former Reservation Commission. This wooden pipe will be of considerable value to us in drainage work, conducting of fresh water, and similar operations when low pressures are obtained. This new one and one-fourth-inch porcelain enameled lined pipe had been in operation for about one month at the time of writing this report, and completely fulfilled expectations in the reduction of friction, the retention of gas content and the elimination at the bottling plant of the extra iron content in these waters which was taken into solution from the metal of the former pipe line.

View showing pergolas and lawn at Washington Baths.

The supply of fresh water to the Geyser bottling works for washing bottles, boiler feed, and similar purposes, was increased about 25 per cent at the request of the Saratoga State Waters Corporation by constructing a concrete wing wall about 50 feet south from the present reservoir to impound additional water. This wing wall was constructed from the surface of the ground about six feet down to an impervious clay stratum found there, thus intercepting and diverting to use at the bottling plant all the ground waters in an additional area.

The old coal bin at the Hathorn building was torn down and replaced by a new and larger one at the request of the Saratoga State Waters Corporation and thirty squares of new galvanized roofing was laid on the boiler room of the same building.

As soon as the contract for the marketing of liquified CO_2 gas was signed, the compressing plant in Geyser park, formerly operated by the General Carbonic Company, was completely overhauled and put into operation. The water supply to the gasometer and also the plant for cooling and boiler feed purposes was placed in condition for advantageous operation. Plans are now under way for the installation of additional water supply during the winter months to insure against freezing of the water in the gasometer and at the plant itself.

The business of bottling and selling the mineral waters of the State Reservation was carried on throughout the year by the Saratoga State Waters Corporation under the terms of its lease. The sale of waters has shown some increase during the past fiscal year, but it is rather difficult to figure how the State will ever realize any profit from this arrangement, because of the many things which the State must do under the terms of this agreement. As the corporation's business grows, any possible profit which might come to the State will very evidently be more than taken up by the extra work of maintenance, repairs, and supervision, which are the duties of this Department, under the terms of the contract. A statement of the financial results from the first complete year's operation of this lease, will be found in another part of this report.

In the spring of 1921 the sale of liquified CO_2 gas from our surplus mineral waters was advertised and duly let to Messrs. Brown & Lowe of Schenectady as the Saratoga Natural Carbonic Company. The gas is sold to them under the following conditions: They are to furnish all tubes and containers necessary for filling, transporting and selling the gas, and are to take care of all details of distribution. The Saratoga Natural Carbonic Company pays to the State a flat price per pound for gas compressed into their tubes and placed on cars at Saratoga Springs. They are to take a minimum amount of gas each year, this increasing year by year until a total amount of 750,000 pounds is reached.

The result of the first few months' operation, under this contract, shows clearly that this arrangement will produce a very considerable revenue to the State at a very low extra cost and from waters which had heretofore run to waste. The gross receipts for the first three months' operation were $1,819.92. This amount does not appear in the financial statement, inasmuch as these three months are in the fiscal year 1921–22.

Chemical Laboratory. During the year 1921 the laboratory has continued to exercise a strict chemical control of all the wells now in use on the Reservation. An unusual improvement has been noted in most of the wells, especially those located in the village — notably the Old Red Spring, Emperor, Peerless, Patterson and Congress. Of these the increase in flow of the Old Red and Congress springs has been quite phenomenal. In previous years the maximum flow to be expected from either of these wells was from one-half to three-fourths of a gallon per minute, but since the early spring of 1921, they have been flowing from three to five gallons per minute, with no apparent evidence of decreasing. The wells at the Lincoln tract that furnish all the water for bathing increased so much in the quantity of free carbon dioxide gas, that it was difficult at times to fill the storage tanks with water. It was necessary at all times to draw large quantities of gas from the tanks in order to keep the required amount of water in storage.

During the period of the heavy pumping of this tract of springs, close observation was made of the water levels of these wells and wells in the surrounding district to determine the extent of depletion of the mineral water basin.

From these observations and those of the previous year it appears that there can be no detrimental depletion of the mineral water area as long as proper scientific control of the pumping is maintained.

In accordance with the lease granted the Saratoga State Waters Corporation, the laboratory has inspected from time to time the bottling of the mineral waters and has made partial analyses of each day's run of water. This required a total of 310 chemical examinations. There has also been furnished a complete analysis of the Hathorn No. 2, Coesa and Geyser springs.

The new lease of the selling privilege of the excess natural carbonic gas has required considerable experimental work and chemical examinations of the gas. Chemical analyses have been made of practically every day's run of gas as compressed in the cylinders ready for the market. Frequent examinations have been made of the gas direct from the gasometer before entering the compressor.

The service of the laboratory has also been required to investigate difficulties of bottlers in conjunction with the use of gas.

During the year there has been a total of about 1,200 chemical and bacteriological tests made.

DIVISION OF WATERS

DIVISION OF WATERS

Albert H. Perkins	*Division Engineer*
Alexander Rice McKim	*Inspector of Docks and Dams*
Edward H. Sargent	*Senior Assistant Engineer.* *Water Power, Storage and Drainage*
Russell Suter	*Senior Assistant Engineer.* *Water Supply and Sewerage*
Frank H. Macy	*Assistant Engineer*
Frank D. Porter	*Assistant Engineer*
Charles H. Hurley	*Assistant Engineer*
Hollister Johnson	*Assistant Engineer*
Ivan C. Hall	*Assistant Engineer*

DIVISION OF WATERS

Report of the Division of Waters of the Conservation Commission for the half year ending June 30, 1921.

The Division of Waters of the Conservation Commission succeeded to the work originally carried on by the State Water Supply Commission, abolished in 1911. To the administrative functions of that commission, there had been gradually added, up to July 1, 1921, the activities required by the drainage laws, by supervision over the docks and dams of the State, by those required by the amplification of the River Improvement Law in the River Regulation by Storage Reservoirs Law, and there had also been required the general engineering for the Commission. The Division had also gradually amplified and extended the scope of the study of water power, beyond the making of surveys and gathering and studying of statistics. In this branch of the State service were made studies of the economic, business and legal aspects of hydroelectric power development, transmission and distribution, and based on these studies there were gradually evolved the principles upon which were finally founded the Federal Power Act and the State Water Power Act. The articles on drainage in the Conservation Law were also the result of this study of law, economics and business.

It is always necessary that there shall be combined in one mind or small organization a certain amount of the knowledge of the fundamentals of several sciences and professions before there can be taken any correct action in any business so involved as is the business of properly handling the vast water powers in which the State has a proprietary interest. The problem is further complicated by the relation of the State to its corporations and its duties to its people. The need for the work done was apparent, and the Division of Waters shouldered the job. It sought after facts, and strove for justice to all the people of the State in the measures emanating from it. Chapter 499 of the Laws of 1921 created the Water Power Commission, consisting of the Conservation Commissioner, the State Engineer and Surveyor and the Attorney-General, which took over the work heretofore done by the Division of Waters in the Conservation Commission, and transferred the employees of this division to the office of the State Engineer.

Water Power. During the year to July 1, 1921, the Division of Waters had under way surveys, mapping and estimates of capacity and cost of the Gooley reservoir on the upper Hudson, reference to which was made in our 1920 report to the Legislature. This work was not completed up to July 1st, about six weeks field work for one party and some mapping and studies remaining to be done.

On the Genesee river, some additional field information relative to power development in the gorge above Mt. Morris was obtained, and office studies made, using the additional stream flow data available since the studies made in 1910 and 1911. In the preparation of bills and in reports and collaboration thereon, the Division was frequently called upon.

Water Storage. The continuation of the proceedings in the matter of the Black River Regulating District required extended inspections and reports on the proposed Stillwater reservoir, and attendance on the various hearings of the Commission and the Board.

Drainage. The special emphasis which our colleges of agriculture and the departments of agriculture of the Federal and State governments have laid upon drainage during the past ten years is producing its effect, and there is increasing activity among farmers in this work. It was the policy of the Conservation Commission through its Division of Waters to furnish all the aid possible in making surveys, obtaining other data, and making plans and estimates; but to encourage the owners to form voluntary associations for doing the work themselves rather than following through the necessarily cumbersome procedure of the act — the assessment of benefits, collection of taxes, sale of bonds and construction by contract. As a result of this policy, the following projects have been carried through by the farmers themselves:

Capen Project (Niagara County). Work was staked out by the engineers of the Division of Waters and carried through by cooperation among those to be benefited.

Wallkill Project (Orange County). The Quaker creek, part of this project, was carried through in part by the farmers affected, the work having been laid out by the engineers of the Division of Waters.

Verona Project (Oneida County). This project was surveyed by the Commission in 1916 and is being carried out by private parties.

The Flats (St. Lawrence County). At the request of the owners, the work has been staked out for them to do.

The following projects received the attention of the Commission in the manner indicated:

Tibbits creek (St. Lawrence county), report and estimates;
Ley creek.

A petition in due form was received from the owners of 1,500 acres of land in the towns of Salina and DeWitt of Onondaga county, praying for the formation of the Ley Creek Drainage Improvement District. The Commission determined in due form that the project was of sufficient importance to warrant the interference of the State, and ordered a preliminary survey. Such survey was made and preliminary plans and estimates made. An informal hearing was held by the Commission on June 10, 1921, at which time the plans and estimates were explained to the owners and they were requested to state whether they wished the State to proceed further in the matter. It was also suggested to them that they try to get together in a voluntary agreement and do the work themselves. They unanimously expressed themselves as desirous that the State should proceed.

East Pembroke (Genesee County). The petition for the drainage of about 600 acres near East Pembroke, Genesee county, was filed with the Commission on August 21, 1920, and was surveyed in December.

Preliminary plans and estimates were prepared and presented to the owners on April 4, 1921. Of those who were present, a majority were opposed to the further prosecution of the project, and it was accordingly left without further attention from the Commission, but may be brought up at any time again by the owners.

Hastings (Oswego County). A petition in due form was filed with the Commission by the owners of about 3,000 acres of swamp lands near Central Square. A considerable part of this land is now under cultivation and is a very high grade of muck. Surveys were made in May and June, 1921, and the results turned over on July 1st to the Water Power Commission for its action.

Ballston Lake. Reconnaissance and conferences disclosed that this project was not for the primary purpose of the drainage of agricultural land for agricultural purposes, and it was not proceeded with.

Hydrometric Work. Stream flow measurements in the State were carried on in cooperation with the United States Geological Survey. The results of the work will be found in the reports of the United States Geological Survey and the State Engineer and Surveyor.

The gathering of this data is of the greatest importance to the State and private owners of water power. It involves a great amount of painstaking detail work, of which the United States Geological Survey has made a specialty for many years.

In addition to the general supervision of the stream gagings, the engineers of the Division of Waters continued its analysis of the data, and its use in estimating the water resources of the State and in the compilation and collation of the data.

General Engineering. The Division of Waters was called upon constantly for opinion, and plans and estimates for small works for the other divisions of the Commission. This included work on buildings and other structures and water supplies for fish hatcheries, estimates of quantity and value of water power sites on State lands or lands to be purchased for the Adirondack Park, etc.

Canaseraga Creek Improvement

The litigation of the question of the validity of the assessments for the improvement work was continued, and the engineering work in connection therewith done by the Division of Waters.

The maintenance work done on this project by the Division during the season consisted in the cleaning out of East and West Mud Runs by dynamite, the building of several stone and brush protective works, and the removal of portions of gravel bars and other obstructions.

By executive order of the Commission, the Division of Waters was charged with the responsibility for the execution of section 22 of the Conservation Law. Technical examination and revision of plans were made in the office by the engineers and field examinations made by an inspector of docks and dams.

Report of the Bureau of Docks and Dams, January 1 to June 30, 1921

This Bureau has examined and passed upon the proposed plans and specifications for one dock and twenty-four dams. The location and inspection of the existing structures were continued by five summer employees under the direction of the inspector of docks and dams. The assistants locate the docks and dams and report the condition and certain measurements and data required. To date there are over 2,000 docks and over 3,000 dams, concerning which we have data on file.

Water Supply and Sewerage

During the early part of the year 1921 activity in the construction of water supply systems picked up and there was good promise of a considerable number of applications during the course of the year. This condition was brought about by the decline in costs of material and labor and also by the urgent necessity for such systems which had arisen during the five previous years.

Sewerage applications came in at about the same rate as the year before.

By chapter 499 of the Laws of 1921, on July 1, 1921, the jurisdiction in water supply matters heretofore exercised by the Conservation Commission was transferred to the Water Power Commission, composed of the Conservation Commissioner, the Attorney-General and the State Engineer and Surveyor. By the same act, section 525 of the Conservation Law, under which all sewerage applications had been made to this Commission, was repealed.

Water Supply Applications

The following list shows action taken on water supply applications during the year 1921:

No.	APPLICANT	Filed	Approved	Permit to operate
224	Village of Canton			June 28, 1921
260	City of Watervliet		*Mar. 18, 1921	
261	Village of Tupper Lake	Jan. 21, 1921	Feb. 14, 1921	
262	Village of Brownville	Feb. 11, 1921	Mar. 11, 1921	Building.
263	City of Plattsburgh	Mar. 26, 1921	April 29, 1921	Building
264	Village of Ilion	June 14, 1921	June 29, 1921	Building

* Rejected.

Sewerage Applications

The following list indicates the action taken on sewerage applications during the year 1921:

No.	APPLICANT	Approved by State department of Health	Approved by Conservation Commission
904	Chapman, I. J. & Son, Canastota, creamery wastes	....	Jan. 6, 1921
905	Van Hornesville Cooperative Cheese Factory, wastes	....	April 6, 1921
942	Suffolk County Tuberculosis Hospital, Holtsville, disposal	....	Jan. 14, 1921
943	Port Chester, village of, Beech St.	....	Jan. 1, 1921
946	Letchworth Village, chlorination	Jan. 6, 1921	Jan. 19, 1921
947	Levy Dairy Co., Cedarville Station, wastes	Jan. 6, 1921	Dropped.
948	Dairymen's League Cooperative Association, Inc., Arkville, wastes	Jan. 26, 1921	Dropped.
949	Syracuse, city of, treatment works	Feb. 11, 1921	Mar. 3, 1921
950	Dairymen's League Cooperative Association, Inc., creamery at Port Jackson	Feb. 14, 1921	Suspended.
951	Syracuse Rubber Co., E. Syracuse, sewage	Feb. 15, 1921	Mar. 18, 1921
952	Spring Valley, village of, sewerage and treatment	Feb. 17, 1921	Mar. 3, 1921
953	Garden City Co., Cedar Valley, extension to pumping station	Feb. 18, 1921	Mar. 3, 1921
954	Community of St. Mary of Peekskill, disposal	Feb. 28, 1921	May 3, 1921
955	New Lebanon, Town of, School District No. 1, disposal	Mar. 5, 1921	Mar. 22, 1921
956	Brown & Bailey Condensed Milk Co., Lakeville, wastes and sewage	Mar. 16, 1921	Dropped.
957	Clyde, village of, omission from construction	Mar. 16, 1921	Mar. 31, 1921
958	Holbrook Co., Greenport, wastes	Mar. 16, 1921	April 8, 1921
959	Mamaroneck, Town of, Sewer District No. 1, disposal	Mar. 21, 1921	Mar. 29, 1921
960	Benson, Wm., Camp Buck Island, Lake Placid, disposal	Mar. 31, 1921	May 3, 1921
961	Agen, W. J., Madrid Creamery, wastes	April 1, 1921	May 7, 1921
962	Telling Belle-Vernon New York Company, Inc., Ripley, wastes	April 5, 1921	April 14, 1921
963	Westchester County Almshouse, Mt. Pleasant, treatment works	April 6, 1921	April 19, 1921
964	Canandaigua, City of, treatment works	April 6, 1921	April 19, 1921
965	Mohegan Inn Corporation, Yorktown, treatment works	April 6, 1921	May 27, 1921
966	Skaneateles Paper Co., Willow Glen, sewage treatment	April 6, 1921	April 28, 1921
967	Oneonta, Town of, School District No. 6, sewage disposal	April 13, 1921	April 28, 1921
968	Fisheries, Products Co., Promised Land, wastes	April 13, 1921	May 7, 1921
969	Rensselaer, city of, Willow Street	April 19, 1921	May 4, 1921
970	Owasco Country Club, sewage disposal	April 22, 1921	May 7, 1921
971	Tuckahoe, village of, Armour Villa Ave, Summit Street, etc.	April 23, 1921	May 3, 1921
972	Coon, E. W., cheese factory at Chaumont, wastes	April 25, 1921	May 4, 1921
973	A. & P. Products Corporation, Brockport, wastes	April 26, 1921	May 19, 1921
974	New York Association for Improving the Condition of the Poor, Home at Eltingeville, sewage	May 6, 1921	May 27, 1921
975	Fischang, L. E., Rendering Plant, Kingston, wastes	May 7, 1921	May 27, 1921
976	Woodridge, village of, sewerage and disposal	May 14, 1921	May 27, 1921
977	Harrowich, Dr. Max, Residence in Cornwall, disposal	May 16, 1921	June 4, 1921
978	Tarrytown, village of, Union Avenue, etc., extensions	May 20, 1921	May 27, 1921
979	Massena, village of, So. Main, Cook Street, etc., extensions	May 26, 1921	June 17, 1921
980	Wolfe, H. J., Milk Station at Bartlett, disposal wastes	June 7, 1921	Dropped.
981	Shefford Cheese Co., Creamery at Spring Lake, wastes	June 7, 1921	June 15, 1921
982	Southold, Town of, School District No. 5, sewage disposal	June 7, 1921	June 17, 1921
983	Bettman & Sugarman, Camp Barrington, disposal	June 7, 1921	June 28, 1921
984	Syracuse, city of, outfall works, details	June 7, 1921	June 17, 1921
985	Erie County Agricultural Society, Fair Grounds at Hamburg, disposal	June 7, 1921	Dropped.
986	Hempstead, Town of, School District No. 20, Lynbrook High School, Disposal	June 7, 1921	June 28, 1921
987	Mamaroneck, Town of, Sewer District No. 1, disposal, amendments	June 11, 1921	June 20, 1921
988	Papec Machine Co., Shortsville, sewage disposal	June 11, 1921	Dropped.
989	E. Rochester, village of, sewerage	June 11, 1921	Dropped.
990	Conewango Dairymen's Cooperative Association, Conewango Village, wastes	June 18, 1921	Dropped.
991	State School for Mental Defectives at Rome, sewage treatment	June 23, 1921	June 30, 1921
992	Villenova Cheese Factory Co., Villenova, wastes	June 30, 1921	Dropped.

CONSERVATION BUREAU

OF

ATTORNEY-GENERAL'S OFFICE

CONSERVATION BUREAU, ATTORNEY-GENERAL'S OFFICE

CHARLES D. NEWTON	Attorney-General
ADELBERT F. JENKS	Deputy Attorney-General In Charge of Conservation Bureau
E. J. LAKE	Deputy Attorney-General
EUGENE E. HOWE	Deputy Attorney-General
P. J. FINN	Deputy Attorney-General
W. T. MOORE	Deputy Attorney-General
J. O. BATES	Deputy Attorney-General

CONSERVATION BUREAU — ATTORNEY-GENERAL'S OFFICE

The Attorney-General's office, during the past year, has rendered many opinions involving matters relating to the Conservation Law. A brief summary of some of the more important opinions follows:

As to the power of the Legislature to regulate cutting trees on privately owned lands: Here an opinion was reached that the Legislature may regulate the cutting of trees on privately owned lands, under the police power of the State, provided, upon sufficient proof, it appears that an emergency affecting the health, comfort, morals or welfare of the people, or of any considerable part of the people, exists. This legislation, however, must be reasonable, nondiscriminative, affecting all of the same class alike, and adapted to meet the emergency sought to be relieved.

As to the power of the Legislature to enact a statute in view of constitutional prohibitions, authorizing the State Commissioner of Highways to occupy a right of way over lands in the Forest Preserve necessary to construct or improve the State and county highways, and using sand, gravel and stone from State lands necessary in connection with the improvement of said highways: Here it was found that the legislation which followed the adoption of the Constitution of 1894 rested upon the assumption that section 7 of Article VII, when properly construed, does not forbid the improvement of existing or the laying out and construction of new highways in the Forest Preserve by the Highway Department, nor the laying out of paths and roads by the Conservation Commission.

As to the construction of covenants in a deed by William Seward Webb and another to the People of the State of New York: This deed, dated January 16, 1896, conveyed to the people about 75,000 acres of land within the Forest Preserve. About 15,000 acres of this tract are within township 8 of John Brown's tract. The grantors owned other lands in township 8, and in their deed to the State covenanted that none of the remaining lands in this township belonging to these grantors, which had not already been contracted by them to be sold, "shall be used or sold for commercial, agricultural, manufacturing or other purposes, except as mentioned in said Thompson contracts, but the same shall by the parties of the first part, their heirs and assigns be used and sold exclusively for permanent forestry, hotel, camp and cottage purposes", and that future deeds should contain a clause "binding the purchaser thereof, his heirs and assigns to a perpetual use of said lands for permanent forestry, hotel, camp and cottage purposes". The Champlain Realty Company now owns through mesne conveyances about forty acres of the remaining land, which is subject to the covenants referred to. The Champlain Realty Company submitted for execution by the Conservation Commissioner an agreement affecting said covenants. It was held that the execution of an agreement providing for the cutting of timber on this tract of land subject to the covenants in said deed and subsequently reforesting the same, would be a violation of said covenants.

An opinion of interest, under consideration at the present time by the Attorney-General's office, relates to a claim presented by the British government to the United States government, through an international tribunal created by solemn convention, entered into between the two contracting governments, in behalf of the so-called Canadian Cayugas, living north of Lake Erie. The amount of the claim, with interest to the date of filing, is $976,028. The alleged liability is founded on a covenant of the United States in the Treaty of Ghent, that it would restore all rights possessed by Indian tribes in 1812, which were suspended on account of hostilities against the United States in that war. The State of New York in 1795 purchased the lands of the Cayuga Nation by treaty, and agreed to pay $2,300 by annuity forever to them. Prior to that time the Cayugas became divided. A portion of the tribe crossed the lakes and lived with the Mohawks at the Grand river. Since 1812 only those Cayugas living on the New York side of the lakes have received and participated in the annuity. The Canadian group have made repeated attempts to have the State of New York recognize them as entitled to participate, but without avail. The New York group of Indians contend that, in separating in 1784, those who removed from this State abandoned all rights in tribal property lying on this side of the lakes, and have opposed all efforts of the Canadian Indians to share in the annuity. The question of the liability of the United States, under the provisions of the Treaty of Ghent and the Convention of 1852, must be considered, as well as other questions affecting a settlement.

Partition Actions

Of seven partition actions commenced by Frank L. Bell and George N. Ostrander, wherein the State is made a party defendant, one action, involving Lot 19, Oxbow Tract, Hamilton county, was decided adversely to the State. Judge McPhillips contended that the deed from the Comptroller, on account of the sales of land for taxes in the year 1877, and all subsequent sales, be declared null and void as to Lot 19, Oxbow Tract, on condition that taxes for nonpayment of which the alleged sales were made in 1877, 1881 and 1885 be ascertained by the Comptroller and paid by the plaintiffs. This case is on appeal to the Appellate Division.

The other partition actions involve the same law question, and the law applicable here is to abide the event of final decision in the appellate court or courts in the Lot 19 case. A stipulation has been entered into to try these cases before Judge Borst.

Judgment has been entered in a partition action commenced by the People against Finch, Pruyn Company involving Lots 71, 72, 85 and 86 in the Tract West of road Patent, Essex county.

Another partition involves Lot 19, Tract West of Road Patent, Essex county. This was commenced by Finch, Pruyn Company against William H. Faxon and the People in September, 1921.

An action entitled "Frank L. Bell v. Stella Phelps Bell, Theron Smith et al., and the People of The State of New York" is at issue. This involves partition of Lot 80, Township 21, Totten & Crossfield's Purchase, Hamilton county.

Claims

Eleven claims have been filed against the State of New York by the International Paper Company, Champlain Realty Company and Frank L. Bell, involving lands appropriated in Township 11, Old Military Tract, Essex county. The awards demanded in the claims amount to $575,920.

Another claim referred to this Bureau is for permanent appropriation of minerals, easements and rights in land by the State for public and State park purposes pursuant to section 59 of the Conservation Law and chapter 146 of the Laws of 1917. This claim is filed by Lilla L. Thompson and others, and the alleged damage amounts to $1,000,000.

Penalty Actions

A trespass action brought against Hyland Steeves in Washington county, for penalties and damages for cutting trees on lands in the Forest Preserve, was decided in favor of the State, and the amount of the judgment with costs has been transmitted to the State Treasurer.

In Franklin county two actions were commenced against various defendants for using spot lights while hunting deer. These actions were adjusted by the payment in each instance of $50 to the State.

An appeal is pending in an action brought by the People against Clarence Longwell in Schuyler county. The alleged violation was for operating a fyke net in the waters of Lake Lamoka. Verdict for defendant was rendered in March.

A top-lopping case against Fred Perkins was commenced in May, 1921, and settlement was perfected for $20 in September. This action was brought for failure to lop 20 evergreen trees in the town of Wilmington, Essex county.

Various actions for penalties involving the above questions and others relating to the Conservation Law, have been disposed of during the year and several are at issue and on appeal.

Title Actions

Of the many ejectment actions commenced during the year, one against George H. Carlin, on Township 40, Hamilton county, is of interest. Upon the trial of this action the judgment obtained against Mr. Carlin in 1904 will be considered by the court as well as subsequent facts in connection with the title to this parcel. A motion to issue execution on the old judgment was denied by the courts.

In an action against George Baldwin and Jennie Baldwin in Hamilton county, where Justice Whitmyer held that title by adverse possession could not be acquired as against the State, the Appellate Division has affirmed this opinion. The defendants have served notice of appeal to the Court of Appeals. It is desirous that the principle here involved should be passed upon by the Court of Appeals, as it has an important bearing on many matters involving Adirondack and other lands.

Actions against John W. Olmstead and George N. Ostrander were disposed of by defendants refunding to the State, in each instance, the sum of $138.97, on account of failure of title to land to which they had given the State a warranty deed in Hardenburgh Patent, Great Lot 6, Robinson Tract, Lot 207. The State purchased this parcel of land from Olmstead and Ostrander in 1900, and subsequently the State, having brought an action in ejectment against one Hiram Sprague, an occupant of the land, was defeated, and costs to the extent of $114.74 were taxed against the State. The deed given the State by Olmstead and Ostrander, contained a covenant of warranty; and in the above actions the amount received represented the purchase price paid by the State, with interest thereon for six years at 6 per cent, and the costs taxed against the State in the ejectment action.

Ejectment actions disposed of during the year by trial involve lands in various counties. Among them, mention is made of an action against Henry Dupell and Clara Dupell, where it was sought to recover possession of Lot 70, Township 4, O. M. T., Clinton county. This was decided in favor of the State. Another action in which judgment for the State has been entered is entitled "The People against David Brennen". This relates to Lots 86 and 107 of Township 9, Moose River Tract, Hamilton county. Two actions involving lands in Lewis county have been tried but have not been decided by the court.

The foregoing report illustrates the character and variety of the work of the Conservation Bureau of the Attorney-General's office, but not its volume. It would serve no useful purpose to catalogue all the activities of the Bureau. Opinions are sought on all sorts of questions connected with the Conservation Law in its application to the public. Many of these questions are of far-reaching importance, and, in answering them, careful study and numerous consultations are required, to the end that sound conclusions may be reached. The Comptroller has upon his list of State lands, a large number of parcels located in the Forest Preserve, upon which the State is paying taxes. In many cases the State's title, derived from tax sales, is in grave doubt; and friendly actions have to be commenced, as it is deemed against public policy to abandon the State's claim of title to land. It is considered wiser to submit such cases to the Supreme Court. Difficult questions of title are constantly under examination in aid of land purchases for Forest Preserve purposes, and in preparing to try ejectment and equity actions involving such questions.

The Bureau defends the officers and employees of the Conservation Commission in all cases, where, in the discharge of their duties, they are charged with negligent or other tortious conduct resulting in damages. Several such actions have been defended during the past year. A claim for damages against the former Conservation Commissioner growing out of his refusal to recognize the validity of a lease granted to the Saratoga State Waters Corporation by the Commissioners of the State Reservation at Saratoga Springs, is now pending in the Supreme Court. This action is being defended by the Conservation Bureau. Actions for penalties for violations of the fish and game law; for the pollution of streams inhabited by fish; for unlawfully setting fires in the Forest Preserve and in certain towns outside thereof; and for cutting timber and other trespasses upon State land, are always pending, and constant effort is required to prevent their accumulation.

The Bureau also defends all claims for lands appropriated by the Conservation Commission for Forest Preserve purposes, and all other claims where the rights and interests of the State in relation to conservation are involved.

The Bureau has recently entered a judgment upon an order of the Appellate Division, Fourth Department, which reversed a judgment of over $100,000 against the State, and dismissed the claim upon the merits. The claim of the Taggarts Paper Company growing out of the appropriation of land for the Forest Preserve, demanding about $450,000, was cut by the Court of Claims to a little over $200,000. The Court of Claims refused to allow interest on the value of the land, damages resulting from the Gaffney option, and expenses of preparation for trial, amounting to over $100,000. Both the Appellate Division and the Court of Appeals have sustained the contentions of the Conservation Bureau, and the matter is now pending in the Supreme Court of the United States.

FINANCIAL STATEMENT

FINANCIAL STATEMENT

Summary of Receipts and Disbursements, Exclusive of Regular Accounts with the State Comptroller and of Division of Saratoga Springs, for Fiscal Year Ending June 30, 1921.

RECEIPTS

Fines and penalties	$77,727 70	
Net licenses	27,564 21	
Breeders' licenses	1,388 00	
Hunting licenses	289,658 59	
Dog licenses	2,434 00	
Tax and rent, shellfish lands	20,845 69	
Foreign game tags	6,207 20	
Trout tags	2,152 00	
Importation and possession licenses	1,320 00	
Badges	27 00	
Sale of boats	206 13	
Sale of skins	244 89	
Sale of carp, etc	1,635 40	
Sale of duplicate hunting license buttons	616 65	
Rebate on pheasants, lost in shipment	75 00	
Cuba reservoir rentals	3,381 00	
Trespass on State land	6,212 88	
Sale of trees	11,308 53	
Fire rebate	9,491 46	
Top lopping	1,218 40	
Refund on payroll	5 02	
Fire fines	834 11	
Sale of buildings	352 00	
Sale of maps	224 00	
Sale of hay	618 00	
Sale of wagons and sleighs	58 00	
Road permits	180 00	
Blister rust	500 00	
Land refunds	1,511 64	
Land rentals	135 00	
Magazine	1,320 26	
Miscellaneous	907 38	
		$470,360 14

DISBURSEMENTS

By checks to State Treasurer	469,851 36	
By costs and collections	508 78	
		470,360 14

Disbursements During Fiscal Year of 1920-1921

(Exclusive of Division of Saratoga Springs)

Administration

Salaries, regular	$59,902 51	
Salaries, temporary	1,416 32	
Fuel, light, heat and power	366 06	
Printing — general	9,779 40	
Printing departmental reports and maps	2,118 75	
Equipment, supplies and materials	10,745 53	
Traveling expenses	3,998 06	
Communication	9,977 06	
Rent	628 28	
Repairs	1,794 78	
General plant service	1,844 20	
Fixed charges	591 53	
Mounting of fresh water fishes for State Museum collection	659 00	
Retired veteran, pension	500 88	
		$104,322 36

Division of Fish and Game

Game Protection:			
Salaries, regular		$225,974 65	
Salaries, temporary		7,802 12	
Printing		29,580 15	
Advertising		210 56	
Protectors' expenses — equipment and supplies, traveling, etc.		119,683 32	
General expenses — equipment and supplies, including hunters' license buttons, fish seals, repairs to tagging machines, etc		23.740 38	
Expenses of prosecutions		3,600 21	
Refunds for licenses and fines erroneously collected		327 10	
Rent		4,974 13	
Expenses of boats and launches including salaries of engineers		17.099 40	
			$432,992 02
Fish Culture:			
Salaries, regular		$31,550 00	
Wages, regular and temporary		70,095 33	
Maintenance and operation of hatcheries		86,603 61	
Ponds and rearing races		771 37	
Repairs to fish car and installation of aerating system		2,046 51	
Adirondack hatchery, construction of storage shed		475 29	
Chautauqua hatchery, repairs		31 57	
Caledonia hatchery, sanitary accommodations		915 34	
Caledonia hatchery, improving water supply		924 38	
Dunkirk hatchery, garage		693 67	
Dunkirk hatchery, piping from city water main		300 00	
Dunkirk hatchery, grading		1,696 25	
Dunkirk hatchery, heating plant		833 33	
Fulton Chain hatchery, new floor and hatching troughs		469 61	
Fulton Chain hatchery, purchase of land		1,000 00	
Sodus Point hatchery, purchase of land		5,000 00	
Scriba Creek, dredging and boat house		820 09	
Oneida hatchery, completion of boat house		121 07	
Saranac Inn, lighting system		50 00	
Marine railway and wharf		2,458 54	
D. O. Miller, reimbursement		458 06	
			207,314 02
Marine Bureau:			
Salaries, regular	$14,550 00		
Salaries, temporary	72 00		
Maintenance and operation	5,653 90		
Rent	3,983 54		
		24,239 44	
Game Bird Farms:			
Salaries, regular	$14,606 72		
Wages, temporary	3,150 47		
Maintenance and operation	25,140 72		
		42,897 91	
Pollution of waters — investigations		13,313 19	
Biological survey, waters of Lake George		1,965 21	
			722,742 59

Division of Lands and Forests

Salaries, regular		$33,100 00	
Reforesting:			
Wages, temporary, reforesting and survey		43,082 98	
Expenses, general printing, food, supplies, equipment, hired horses, traveling, etc		34,732 76	
			110,915 74
Fire Fighting and Prevention:			
Salaries, regular	$110,216 66		
Temporary labor	17,500 00		
Expenses, equipment, supplies, traveling	34,980 38		
Erection of observation towers	1,768 23		
Fire lanes, trails anld shelters, forest preserve	2.274 43		
Emergency — suppressing forest fires	23,703 30		
		$190,443 00	
Printing departmental reports and maps		6,320 33	
Repairs to docks and pavilions St. Lawrence Reservation		1,615 52	
Repairs to highways and construction of new highway, St. Lawrence Reservation		6,911 01	

Construction of new docks, St.
Construction of pavilion, Chau
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Comstock prison refund.......
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ing, etc..................
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River regulation by storage
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Bureau of Docks and Dam

Salaries, regular ....
Wages, temporary ....
Expenses — equipment, suppli
ing, etc. ....
Construction of dam at foot
lake, Fulton Chain, Hamilt

Hydrographic Investigatio

Salaries, temporary ....
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ing, etc. ....

Canaseraga Creek Improv

Maintenance and improvement.
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Closing out stock of supplies.
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Allowance to Albany agent fo
his contract with us becau
Loss on drinking water suppli
during war emergency ....

Washington Baths:

Supplies ....
Repairs ....
Wages ....

Lincoln Baths:		
Supplies	$403 85	
Repairs	1,176 07	
Wages	4,734 49	
		$6,314 41
Bus operation		1,833 09
Saratoga Baths:		
Fuel, light, power and water	$9,023 75	
Supplies	1,083 29	
Repairs	1,496 15	
Wages	11,849 90	
		23,453 09
Laundry:		
Linen, all bath houses	$3,613 86	
Supplies	880 92	
Repairs	456 50	
Wages	3,321 52	
		8,272 80
Heating and Pumping Plant:		
Fuel, light, power and water	$5,939 64	
Supplies	212 42	
Repairs	876 39	
Wages	3,837 65	
		10,866 10
Gas Compressing Plant:		
Fuel, light, power and water	$313 14	
Supplies	114 65	
Repairs	227 34	
Wages	20 00	
		675 13
Patterson building expense		963 [illegible]
Office and General Expense:		
Supplies	$75 58	
Travel and communication	34 65	
Salaries	2,793 32	
		2,903 55
Trucking Expense:		
Supplies	$524 90	
Repairs	444 86	
Wages	1,698 40	
		2,668 16
General supplies		276 04
General repairs		498 46
Paint shop expense		545 22
		$69,595 52

Income

Water royalties	$6,784 15	
Washington baths, receipts	14,174 67	
Lincoln baths, receipts	19,674 08	
Saratoga baths, receipts	25,992 48	
Gas sales	38 00	
Rentals	3,037 95	
Interest	721 74	
Miscellaneous sales and receipts	789 67	
		71,212 74
Profit for year		$1,617 22

Departments Not Productive of Income

Personal Service:		
Parks and roads	$9,300 29	
Well department	2,670 50	
Engineering department	3,601 50	
Laboratory	2,400 00	
Superintendent's office	10,325 17	
		28,297 46

Other Expense:

Parks and roads ....
Well department ....
Fuel, light, power and water..................
Supplies ....
Repairs ....
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Travel and communication ....
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